Number of British plants

Instead of 1636 species (Gray's arrangement) or 1503 (Smith's English Flora) it may be questioned whether 1200 perfectly distinguishable species are natives of Britain. Professor Henslow says that "there are some genera
"whose species have possibly been
"multiplied fourfold beyond the
"number which they really contain.
"In consequence of this our Flora
"appears to occupy a much higher
"rank among the Floras of different
"countries than it ought to do, and
"this must lead to very erroneous
"conclusions respecting the laws
"which regulate the numerical
"distribution of species in different
"latitudes." Hookers Bot. Mag. Vol-1-230

29,321 /B

Thomson - Spring - 221 -
hen spring the living herbs &c

Mr H. C. Watson's essays on the British
Flora -

The little white fungus I found in
patches at Horsepool in a meadow
Clavaria vermicularis. W. W. S.

THE

BRITISH FLORA.

Elizabeth Wilcox

59874

THE

BRITISH FLORA;

COMPRISING THE

PHÆNOGAMOUS, OR FLOWERING PLANTS,

AND

THE FERNS;

BY

WILLIAM JACKSON HOOKER, LL.D. F.R.A. & L.S.
MEMBER OF THE ACADEMIES OF
LUND, PHILADELPHIA, NEW-YORK, BOSTON, ETC. ETC.
OF THE IMPERIAL ACAD. NATURÆ CURIOSORUM,
HONORARY MEMBER OF THE ROYAL IRISH ACADEMY,
AND
REGIUS PROFESSOR OF BOTANY IN THE UNIVERSITY OF GLASGOW.

> —"Call the vales, and bid them hither cast
> Their bells and flourets of a thousand hues."

LONDON:
LONGMAN, REES, ORME, BROWN, & GREEN.
M.DCCC.XXX.

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TO

ROBERT GRAHAM, M.D., F.R.S., EDINB. F.L.S.

&c. &c. &c.

AND

REGIUS PROFESSOR OF BOTANY IN THE UNIVERSITY OF EDINBURGH.

MY DEAR SIR,

FELLOW-LABOURERS as we are together in the same field, occupied professionally in the same pursuit in Sister Universities of this country, and alike anxious for the advancement of our favourite science;—these may be considered, in themselves, sufficient reasons why I should wish to dedicate the following pages to you. But I have a still stronger inducement; namely, that I may thereby record the friendship which has, I believe, almost from the first of our acquaintance, subsisted between us, and which I fervently hope may continue during the remainder of our lives.

That this work may be found useful to your students, as well as to my own, and that your zealous endeavours to promote the interests of your Class, and of Botany in general, may be rewarded by the most happy success, are amongst the sincerest wishes of,

Dear Sir,

Your faithful and affectionate Friend,

THE AUTHOR.

INTRODUCTION.

The object which the Author proposed to himself, in preparing a new Flora of the British Empire, was of a twofold nature: 1stly, to provide the young Student with a description of our native plants, arranged according to the simplest method; and 2dly, to afford to the more experienced Botanist, a manual, that should be useful in the field as well as in the closet. In regard to the first object, the experience of nearly an hundred years has proved to every unprejudiced mind, that no system has appeared which can be compared to that of the immortal Swede, for the facility with which it enables any one, hitherto unpractised in Botany, to arrive at a knowledge of the Genus and species of a plant. The Linnæan method is, therefore, here adopted.

It has been the opinion of the author, and of many of his friends, that, in most of the Floras hitherto published, however excellent in other respects, either too much or too little space has been devoted to the generic and specific descriptions and synonyms; in the one case, swelling the book to a size, which induces both expense to the purchaser, and difficulty in consulting the several volumes; in the other, reducing the technical characters to the shortest possible compass, so that they can scarcely be made available, except to those who are already partially acquainted with the plant under examination, or with some of its near allies. Between these extremes, the author has attempted to steer a middle course, by giving diagnostic remarks where, and where only, they have appeared to him necessary; confining the synonyms, with few exceptions, to those of the writer who first described the plant, to a good figure, and a reference to a single Flora of England and of Scotland; and by adopting such an arrangement of the subject-matter as would best occupy every portion of the page, without rendering it obscure to the reader. How far his endeavours have proved successful, must be left to the experience and judgment of those for whose use the work is particularly intended. Should it prove serviceable in advancing the cause of Botanical science in this country, the end which was fondly anticipated at the commencement of the undertaking will be fully accomplished. During the progress of the labour, it occurred to the Author that he could give an additional interest to the volume by subjoining short notices of the uses and properties, or some little historical remarks relative to the species, the origin of the generic names, &c.: thereby recommending the pursuit of which it treats, to the attention of the many, who are still apt to look upon Botany, as a dry and profitless employment, a system of hard words, destitute of any real utility to mankind.

Mirbel has well remarked, that "Ceux qui proscrivent l'usage des méthodes artificielles n'en ont point saisí le véritable esprit; ceux qui ne s'attachent qu' à ces classifications arbitraires, et qui négligent l'étude des rapports naturels, ignorent la beauté et la dignité de la science;"—a maxim which it is to be wished were more generally acknowledged than it is. For it is unfortunately too much the practice of the day, for the one party, having devoted an exclusive attention to one or other of these Methods, to decry that with which he is unacquainted, or the advantages of which he has never had the good fortune to experience. The more easy the commencement of a study is made, the more votaries will be drawn to it; and though they should attain to no further knowledge of a Natural method than what has been taught by the imperishable writings of a Linnæus and of a Smith, yet let them be assured that in plants, taken individually, and in an isolated manner, there are subjects that will give ample scope for the employment of the talents of the greatest philosophers: in the due contemplation of which they may derive both pleasure and advantage to themselves, and be the means of communicating them to others.

——"The well-directed sight
Brings, in each flower, an universe to light."

Lyonet acquired at least as much honour, and rendered as great service to mankind by his intimate acquaintance with the anatomy and functions of the organs of a single caterpillar, as if he had spent his life in arranging all the known insects of the world, according to a new and Natural System.

Nor let it be supposed that the author is advocating the cause of an Artificial System, to the exclusion of a natural one; for if any one can be more alive than another to the real advantage derivable from a knowledge of the characters of plants, when naturally combined, it is assuredly he, whose duty it is to teach the Science to those who are destined for the profession of medicine. The former method will soon enable the student to ascertain the *Foxglove*, the *Cinchonas*, the *Squill*, and innumerable other plants of which he would be ashamed to be ignorant: but the study of the latter alone will put it in his power to extend his inquiries, and with a prospect of success, to analyse other plants of the same Natural Order, among which he may expect to find the same or more powerful principles than what are hitherto known to us. This alone lays open a wide field of usefulness to the Botanist and the Physician; and with the view to so desirable an object, the name of the Natural Order to which each Genus belongs is mentioned in the following pages; and in the Appendix will be found a complete list of those Orders as far as British Botany is concerned, together with an enumeration of the Genera belonging to them. That the remarks upon the Natural Orders could not, owing to the limited nature of the present work, be further extended, is the less to be regretted, now that Mr. Lindley has published his *Synopsis of the British Flora*, arranged according to the Natural Orders: and now that the *Nouveaux Elémens de Botanique* of Professor Richard, have been rendered familiar to the English reader, by Dr. Clinton's Translation. This work of Richard contains an excellent Introduction to, and a Table of, the Natural Orders, and ought to be in the hands of every one who desires information upon the subject.

The labour of compiling the Flora of a country by a careful examination and comparison of specimens themselves, whether in a living or dried state, can only be appreciated by those who have been engaged in an employment of the same kind. The collecting of materials, indeed, in their native hills and vallies, upon the sea-shore, in the woods, and among the majestic alpine scenery with which the northern parts of our island, eminently, abound, generally in the society of friends of a congenial taste, or students full of ardour and enthusiasm, has been a very delightful occupation, especially when taken in conjunction with "anticipations of the pleasure we may have to bestow on kindred minds with our own, when sharing with them our discoveries and our acquisitions." And the task of describing them has, in the present instance, been considerably lightened by the able assistance afforded by many of the most able Botanists of our country, whose names are mentioned, as far as was consistent with the nature of the undertaking, when treating of the respective plants they have tended to illustrate. Mr. Borrer, Mr. W. Wilson, the Rev. Professor Henslow, and the Rev. J. M. Berkeley, have, in an especial manner, rendered service, both by notes and illustrative specimens; and the former gentleman has kindly undertaken a complete revision of the genera *Myosotis*, *Rosa*, and *Rubus*.

The design of the work would not allow of so many stations being given for the rarer plants as could have been wished: and hence the Author has been rather anxious to indicate the range of the species, than the precise spot where any particular one is found. The admirable *Botanist's Guide* of Messrs. Turner and Dillwyn, and the various local Floras, may, for information on this head, be consulted with great advantage; particularly Mr. Purton's *Midland Flora*, Mr. Jones' *Botanical Tour in Devon and Cornwall*, Mr. G. E. Smith's *Plants of S. Kent*, Mr. Winch's *Essay on the Geographical Distribution of Plants in Northumberland*, Dr. Greville's *Flora Edinensis*, and Woodforde's *Catalogue* of the plants of the same neighbourhood, Mr. Hopkirk's *Flora Glottiana*, Dr. Johnston's *Flora of Berwick-upon-Tweed*, the late Mr. Don's *Plants of Forfarshire;* and Mr. Mackay's *Catalogue of the indigenous Plants of Ireland*, which is the fullest list that has yet appeared of the vegetable productions of our Sister Kingdom.

The present volume may be said to terminate with the Ferns. A future one, for which the materials are in a state of very considerable forwardness, will contain the rest of the Orders of the Class *Cryptogamia;* and will be published in such a form, that it may either be considered the second volume of the *British Flora*, or the fifth of Sir J. E. Smith's *English Flora*, and consequently as completing the description of the Plants of our Island.

Glasgow, May 1st, 1830.

BRITISH FLORA.

CLASS I. MONANDRIA.

From μονος, *one*, and ανηρ; in this sense applicable to the stamen: *one stamen*, which should here, as the stamens in all of the first 20 Classes, be found in the same flower with the pistil. But such is not constantly the case with any of the British plants in this anomalous class. *Hippuris* has often numerous lower flowers destitute of stamens; and many of those of *Salicornia* have *two* stamens. *Chara*, by many authors placed here, is assuredly a cryptogamous plant; *Zostera* has the stamens and pistils separate, as has *Callitriche*, in most instances; hence these two genera are removed to Monœcia.[1]

ORD. I. MONOGYNIA.[2] 1 *Style.*

1. Salicórnia. *Linn.* Glasswort.

Perianth single, turbinate, fleshy, obscurely lobed. *Stam.* 1 or 2. *Style* short. *Stigmas* bi-trifid. *Fruit*, an *Utricle*, included in the enlarged *Perianth.*—*Nat. Ord.* Chenopodeæ. *Vent.*—Name, from *sal, salt*, and *cornu*, a *horn*, from the horn-like branches and saline nature of the plants.

1. S. *herbácea*, Linn. (*jointed Glasswort*); stem herbaceous, articulations compressed somewhat thickened upwards and notched, spikes cylindrical slightly tapering at the extremity. *Hook. Scot. i. p.* 1.

α. Stem erect. *S. herbacea, Engl. Fl. v. i. p.* 2.—*S. annua, Eng. Bot. t.* 415.—*S. acetaria, Pallas.*

β. Stem procumbent. *S. procumbens, Eng. Bot. t.* 2475. *Engl. Fl. v. i. p.* 2. *S. prostrata, Pallas.*

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[1] The really anomalous Genera, such as *Callitriche*, and anomalous species, such as *Valeriana rubra* (which has but one stamen), *Val. dioica*, (which is diœcious, though the rest of the species have 2 stamens in the same flower with the pistil), &c. will, in general, be found noticed at the end of the respective classes and orders to which they appear to belong, and they will be referred to the proper stations; as at p. 3.

[2] From μονος, *one*, and γυνη, here made applicable to the *pistil*, or *style*, an essential part of the pistil: or, when the style is so short as not to be visible, the stigmas are counted. The student will do well to bear in mind the meaning of the names applied to the Linnæan Classes and Orders, for they are beautifully expressive of their essential characters.

Salt marshes, plentiful. *Fl.* Aug. Sept. ⊙.—*Plant* leafless, much branched and jointed; articulations a little thickened upwards, very succulent, shrinking much when dry, in which state the upper extremity of each articulation forms a two-lobed membranous socket or short sheath, which receives the base of the articulation above it. *Spikes of flowers* dense, lateral and terminal, equally jointed with the stem, and bearing, at the base of every short articulation, on two opposite sides, a cluster of 3 flowers, each composed of a single *perianth*, apparently quite closed at the top, and pierced, as it were, by the bi-or trifid *stigma* and the single or two *stamens:* when two, appearing in succession. Mr. Wilson observes that the central flower (of the *erect* var. at least) has *two* stamens; one placed below, the other above, the laterally-compressed germen, and the side flowers only *one*, placed above the germen.

2. S. *radícans*, Sm. (*creeping Glasswort*), stem woody procumbent and rooting, articulations cylindrical spreading and notched at the top, spikes oblong obtuse. *Engl. Bot. t.* 1691, *& t.* 2467, (*S. fruticosa*). *Hook. Scot. i. p.* 1. *Engl. Fl. v. i. p.* 3, *and again p.* 3. (*S. fruticosa*).

Muddy sea-shores, but rare; on the Norfolk and Sussex coasts. In the Isle of Sheppey, Kent, *(Prof. Henslow)*. Near Newry, Ireland, *Mr. J. T. Mackay*. *Fl.* Aug. Sept. ♃.—This scarcely differs from the preceding except in its more branching, straggling, and *perennial stem*, quite woody below, often growing at the edge of a low muddy bank, depending from it. The true *S. fruticosa* is a very different plant, and confined to the south of Europe and north of Africa.—The various species of this genus, as well as of others belonging to the same natural family, and growing abundantly on the coasts in the south of Europe and north of Africa, yield a vast quantity of soda, so much employed in making both soap and glass; whence their English name, *Glasswort*.

2. HIPPÚRIS. *Linn.* Mare's-tail.

Perianth single, superior, forming a very indistinct rim to the germen. *Fruit*, a small one-seeded *Nut*.—*Nat. Ord.* HALORAGEÆ. *Br.*—Name from *ἵππος*, *a horse*, and *ουρα*, *a tail*.

1. H. *vulgáris*, Linn. (*common Mare's Tail*); leaves 6—8 or 10 in a whorl linear. *Engl. Bot. t.* 763. *Hook. Scot. i. p.* 2. *Engl. Fl. v. i. p.* 4.

Ditches and, usually, stagnant waters; less frequent in Scotland. *Fl.* June, July. ♃.—Stem erect, simple, jointed. *Whorls* of about 8 *leaves*, which are callous at the point. *Flowers* at the base of each of the upper leaves, the lower ones often destitute of stamens. *Germen* oval, inferior; within its minute rim or border, at the summit, which constitutes the calyx, is situated the *stamen*, with its large two-lobed *anther:* when young, having the *style* passing between the two lobes. *Seed* fixed to the top of the cell of the *pericarp*, and thus inverted.—In deep streams of water connecting the little lakes, or *Broads*, at Surlingham, Norfolk, I have had this plant pointed out to me, by Mr. Deere, 2 and 3 feet long, with the leaves excessively crowded, 3 and even 4 inches long, pellucid, with an opaque nerve, their points not callous; the whole plant submerged, and consequently barren. Again on Ben-y-gloe, in Scotland, at a considerable elevation above the sea, I have found a variety, the opposite extreme of this, scarcely 4 inches high, and apparently the *H. montana* of *Reich. Ic. t.* 86. The arctic *H. maritima* is distinguished by having many *elliptical* leaves in the whorl.

(*See* Valeriana *rubra* in Cl. III.; Alchemilla *arv.* in Cl. IV.; Zostera in Cl. XXI.; CHARA. in Cl. XXIV.)

ORD. 2. DIGYNIA. 2 *Styles.*

(*See* Callitriche in Cl. 21.)

CLASS II. DIANDRIA. 2 *Stamens.*

ORD. I. MONOGYNIA. 1 *Style.*

* *Perianth double, inferior, monopetalous, regular.*

1. LIGÚSTRUM. *Linn.* Privet.

Cor. 4-cleft. *Berry* 2-celled, with the cells 2-seeded.—*Nat. Ord.* OLEINEÆ, *Hoffmansegg and Link.*—Name from *ligo*, to *bind*, on account of the use sometimes made of its long and pliant branches.

H. 1. L. *vulgáre*, Linn. (*Privet*); leaves elliptico-lanceolate, panicle compact. *Engl. Bot. t.* 764. *Hook. Scot. v. i. p.* 3. *Engl. Fl. v. i. p.* 13.

Thickets and, more frequently, in hedges. *Fl.* June, July. ♃.—A *Bush* with opposite, evergreen *leaves*, which, as the plant bears clipping, is frequently planted for fences. *Flowers* small, white. Berries black, globose.

** *Perianth double, inferior, monopetalous, irregular. Seeds enclosed in a distinct pericarp* (*Angiospermous*). Gen. 2—4.

† **2. VERÓNICA.** *Linn.* Speedwell. Blümchen der Treue Ehren-preifs

Cor. 4-cleft, rotate, lower segment narrower. *Caps.* 2-celled.—*Nat. Ord.* SCROPHULARINÆ. *Juss.*—Name of doubtful origin.

* *Spikes or racemes terminal.*[1] *Roots perennial.*

H. 1. V. *spicáta*, Linn. (*spiked Speedwell*), raceme spicate, leaves oblong obtuse serrated pubescent, the lower ones broader ovate or obovate and stalked, stem ascending branching only at the very base. *Engl. Bot. t.* 2. *Engl. Fl. v. i. p.* 17.

β. Stem leaves broader, approaching to elliptical. *V. hybrida. Linn.*—*Engl. Bot. t.* 673. *Engl. Fl. v. i. p.* 17.

Rare. On dry chalky pastures about Newmarket and Bury.—β. in Lancashire, and in Wales, where, in addition to the station discovered for it in Ray's time, *Mr. Wilson* finds it at Ormeshead, and at Gloddarth near Conway. *Fl.* July, Aug. ♃.—The *V. hybrida* seems indeed scarcely deserving of being commemorated as a var. for it differs only in its more luxuriant growth, depending probably upon soil. The *capsule* is obcordate, hairy, terminated by a long *style*.

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[1] V. *arvensis*, *triphyllos*, and *verna*, are placed in the third division, on account of their *annual roots*, although their inflorescence may mor strictly be considered *spicate* or *racemose*, than as consisting of solitary and eaxillary flowers.

A† German popular name is Männer-Treue (man's faith) because the corolla falls off at the slightest breath.

H: 2. V. *serpýllifolia*, Linn. (*thyme-leaved Speedwell*), raceme somewhat spiked many flowered, leaves broadly ovate or elliptical very obtuse nearly entire glabrous, capsules inversely reniform as long as the style. *Engl. Bot. t.* 1075. *Hook. Scot. i. p.* 4. *Engl. Fl. v. i. p.* 20.

β. *alpina;* stems prostrate often rooting, racemes short. *V. humifusa. Dicks. in Linn. Trans. v. ii. p.* 288.

Pastures and road-sides, abundant. β. On the Highland mountains: and on Snowdon; *Mr. Wilson.* Cheviots; *Mr. Winch. Fl.* May—July. ♃.—The var. β. is a singular and very beautiful one, and is often gathered and mistaken for *V. alpina*, which it approaches in the rich colour of its flowers.—In both, the stems, and sometimes the leaves, are more or less pubescent.

3. V. *alpína*, Linn. (*alpine Speedwell*); racemes corymbose few-flowered, leaves elliptico-ovate serrated, calyx and bracteas ciliated, capsule obovate notched tipped with the very short style. *Engl. Bot. t.* 484. *Hook. Scot. i. p.* 4. *Engl. Fl. v. i. p.* 19.

Near the summits of the Highland mountains, but rare. *Fl.* July, Aug. ♃.—About 4 inches high, turning black when dry. Best distinguished from all the varieties of *V. serpyllifolia* by its more upright growth, larger, more acute, and more decidedly serrated leaves, by the fewer, more dense, brighter blue flowers, which are more hairy about the *calyx* and *bracteas*, and by the obovate *capsule* with its very short *style*.

4. V. *saxátilis*, Linn. (*blue Rock Speedwell*); raceme lax few flowered corymbose, leaves elliptical subserrate, stems spreading, capsule ovate its valves bifid. *Engl. Bot. t.* 1027. *Hook. Scot. i. p.* 5. *Engl. Fl. v. i. p.* 19.

Growing on perpendicular exposed rocks of Scotland, rare. Ben Lawers, above Loch-na-gat; Mael Greadha, on Craig Calliach and Mael Duncrosk; *Mr. Wilson;* all in the Breadalbane range. *Fl.* July. ♃.—*Stems* slender, procumbent, woody, much branched. *Leaves* glabrous, bright green, when dry almost black, but semipellucid, thin, and distinctly veiny. *Flowers* large, of a most brilliant blue, in corymbs.

5. V. *fruticulósa*, Linn. (*flesh-coloured Speedwell*); raceme many flowered subspicate, leaves elliptico-lanceolate subserrated coriaceous, stems ascending woody branched at the base, capsule ovate its valves bifid. *Engl. Bot. t.* 1028. *Hook. Scot. i. p.* 5. *Engl. Fl. v. i. p.* 18.

On Ben Cruachan, Argyleshire; *Dr. Walker;* and upon Ben Lawers; *Mr. Brown* (Smith in Engl. Flora). *Fl.* July. ♃.—I am not aware that any other Botanist has ever detected this plant truly wild in the British dominions than those just mentioned: nor have I been able to see a native specimen. As a plant, I believe the species to be truly distinct from *V. saxatilis*, with which, however, it has been confounded by some authors. The stems are more robust and erect than in the preceding species. *Leaves* rigid, pale green, opaque even when dry, elliptico-lanceolate. *Racemes* more elongated, especially when in fruit. *Flowers* flesh-coloured in the plant as I have seen it growing in Switzerland and when cultivated in our gardens. *Fruit* as in *V. saxat.*, obovate, tipped with a style longer than itself; its valves bifid.

** *Racemes axillary. (Root perennial.)*

H. 6. V. *scutelláta*, Linn. (*Marsh Speedwell*); racemes alternate, pedicels divaricated reflexed in fruit, leaves linear somewhat toothed, stem nearly erect. *Engl. Bot. t.* 782. *Hook. Scot. i. p.* 5. *Engl. Fl. v. i. p.* 9.

Wet places and sides of ditches. *Fl.* July, Aug. ♃.—*Racemes* nearly opposite. *Capsule* of 2, flattened, orbicular, membranous lobes. *Flowers* flesh-coloured with darker bluish veins.

H. 7. V. *anagállis*, Linn. (*Water Speedwell*); racemes opposite, leaves lanceolate serrated, stem erect. *Engl. Bot. t.* 781. *Hook. Scot. i. p.* 6. *Engl. Fl. v. i. p.* 21.

Ditches and watery places; less frequent in Scotland than in England.—*Fl.* July, August. ♃.—Intermediate in appearance, between *V. scutell.* and *V. Beccab.* yet abundantly distinct from both. *Stems* succulent, a foot or more high. *Leaves* varying somewhat in width. *Racemes* long, many-flowered. *Pedicels* short, never reflexed. *Flowers* bluish or inclining to purple.

H. 8. V. *Beccabúnga*, Linn. (*Brooklime*); racemes opposite, leaves elliptical obtuse subserrated glabrous, stem procumbent at the base and rooting. *Engl. Bot. t.* 635. *Hook. Scot. i. p.* 6. *Engl. Fl. v. i. p.* 20.

Ditches and watercourses, frequent. *Fl.* Summer months. ♃.—Whole plant glabrous and very succulent. *Racemes* of many bright blue flowers.

H. 9. V. *officinális*, Linn. (*common Speedwell*); racemes spicate, leaves broadly ovate serrated rough with pubescence, stem very downy procumbent, capsule obovate deeply notched. *Engl. Bot. t.* 765. *Hook. Scot. i. p.* 6. *Engl. Fl. v. i. p.* 22.

β. nearly glabrous. *Smith Engl. Fl. v. i. p.* 22. *V. Allionii. D. Don. MSS. Hook. Scot. v. i. p.* 7.

Abundant in woods and pastures, especially in dry situations. β. On the mountains in Scotland and Ireland. *Fl.* May—July. ♃.—A very variable plant, especially in size.[1] *Leaves* astringent and bitter; hence sometimes used medicinally and made into tea.

10. V. *hirsúta*, Hopk. (*small hairy Speedwell*); racemes slender spiked, leaves ovato-lanceolate acute slightly serrated with a few scattered hairs, stem procumbent hairy, capsule obcordate entire. *Hopk. Fl. Glott. p.* 9. *Hook. Scot. i. p.* 6. *Engl. Fl. v. i. p.* 22. *V. sétigera. D. Don, Descr. of Rare Pl. of Scotl. p.* 4.

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[1] Mr. Wilson finds two singular varieties near Aber waterfall, North Wales: both dwarf, 3—4 inches in length, and both having scattered hairs on the stem and leaves; one has these leaves ovate, acute, rigid, tapering gradually into a short footstalk: the other has them rotundate, thin, and membranaceous, distinctly stalked.

Dry heathy places in Carrick, Ayrshire; *Mr. James Smith. Fl.* June. ♃.—I introduced this with much hesitation into the *Flora Scotica.* It has all the appearance of a starved plant of *V. officinalis,* and the flowers are very generally abortive. The fruit certainly differs in wanting the deep notch at the extremity; and the plant remains unaltered, in this respect, for a succession of years in cultivation.

11. V. *montána,* Linn. (*Mountain Speedwell;*) racemes lax few-flowered, leaves cordato-ovate petiolate serrated, stem hairy all round, capsule orbicular two-lobed membranous much larger than the calyx. *Engl. Bot. t.* 766. *Hook. Scot. i. p.* 6. *Engl. Fl. v. i. p.* 23.

Moist woods, not unfrequent. *Fl.* May, June. ♃.—*Stems* a foot and more long, weak, trailing. *Leaves* large, on stalks about equal to them in length. *Capsules* large, quite flat, and resembling those of a *Biscutella,* veiny, their edges denticulate and slightly ciliated. It is strange, with such characters, that this should ever be confounded with the following species.

12. V. *Chamædrys,* Linn. (*Germander Speedwell*); racemes elongated many flowered, leaves cordato-ovate sessile inciso-serrate, stem bifariously hairy, capsule obcordate shorter than the calyx. *Engl. Bot. t.* 623. *Hook. Scot. i. p.* 7. *Engl. Fl. v. i. p.* 23.

Woods, pastures and hedge-banks, frequent. *Fl.* May, June. ♃. *Stem* procumbent, as in the last species, having two opposite hairy lines, and these lines taking different sides above and below each pair of leaves, or decussate. *Leaves* wrinkled, deeply cut in a subalpine var. found by Mr. Wilson in North Wales. *Flowers* large, numerous, very bright blue, greeting us at an early season of the year, and hence rendering the plant a general favourite.

*** *Flowers axillary, solitary.* (*Root annual.*)

13. V. *hederifólia,* Linn. (*Ivy-leaved Speedwell*); leaves all petiolate cordate with from 5—7 large teeth or lobes, segments of the calyx cordate ciliated, capsule of two turgid lobes, stem procumbent. *Engl. Bot. t.* 784. *Hook. Scot. i. p.* 7. *Engl. Fl. v. i. p.* 25.

Fields and hedge-banks, common. *Fl.* April—June. ⊙.—*Stem* weak. *Leaves* rather fleshy, slightly hairy, the upper young leaves alone sessile or nearly so; the terminal tooth or lobe the largest. *Peduncles* longer than the leaves, recurved when bearing fruit. *Caps.* of two, rounded, glabrous lobes, each lobe having 2 large, black, transversely wrinkled, oval, gibbous *seeds,* which are hollowed on the under side.

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14. V. *filifórmis,* Sm. (*long-stemmed Speedwell*); leaves cordato-ovate inciso-crenate petiolate much shorter than the flower-stalks, segments of the calyx lanceolate ciliated, capsule compressed broadly obcordate reticulated. *Sm. in Lin. Trans. v. i. p.* 195. *Buxb. Cent. i. p.* 25. *t.* 40. *f.* 1.

Discovered, first by *Mr. Borrer* growing wild, but very sparingly, at Henfield, Sussex; and, since, near Berwick-upon-Tweed, by *Dr. Johnstone.* (*Mr. Arnott*). *Fl.* Apr. May. ⊙.—Habit of *V. hederifolia,* and not unlike very luxuriant specimens of *V. agrestis;* but differing in its vastly larger size, lanceolate segments to the calyx, and compressed not turgid fruit. The species is not unfrequent on the continent, especially in the southern parts of Europe; but is now first described as of British origin.

H. 15. V. *agréstis*, Linn. (*green procumbent field Speedwell*); leaves all petiolate cordato-ovate inciso-serrate as long as the flower stalks, segments of the calyx oblong obtuse, stem procumbent, capsule of 2 turgid keeled lobes, cells about 6-seeded. *Engl. Fl. v. i. p.* 24. *Borr. in Engl. Bot. Suppl. t.* 2603.

Fields and waste places, abundant. *Fl.* Apr.—Sept. ⊙.—Prostrate. *Stems* 3—4 inches long, slightly hairy. *Peduncles* longer than the leaves. *Fruit* of two round tumid lobes, much smaller than the calyx. *Seeds* large, cupped.

H. V. Buxbaumii – see appendix 1.

H. 16. V. *políta*, Fries, (*grey procumbent field Speedwell*); leaves all petiolate cordato-ovate inciso-serrate shorter than the flower-stalks, segments of the calyx ovate acute, stem procumbent, capsule of 2 turgid lobes, cells many-seeded. *Reich. Iconogr. v.* 3. *p.* 45. *t.* 246. —*V. agrestis. Engl. Bot. t.* 783. *Hook. Scot. i. p.* 7.

Cultivated fields and waste places, often with the preceding. *Fl.* throughout the summer. ⊙.—Mr. Borrer has well illustrated this and the foregoing, *V. agrestis*, in the Supplement to *Engl. Bot. t.* 2603. The two and *V. filiformis*, and the *V. opaca* of Fries, (with spathulate segments to the calyx,) border very closely upon each other, and are probably often confounded by Botanists.

17. V. *arvénsis*, Linn. (*Wall Speedwell*); leaves cordato-ovate serrated the lower ones petiolate the upper or bracteas sessile lanceolate, longer than the flowers which are subspicate, stems ascending. *Engl. Bot. t.* 734. *Hook. Scot. i. p.* 7. *Engl. Fl. v. i. p.* 24.

Fields and walls, plentiful. *Fl.* in the spring months and in early summer. ⊙.—Very different from the last, especially in the inflorescence, which, if the upper leaves be considered bracteas, as they really are (for they differ both in size and shape from the canline ones), is truly racemose or subspicate. The same may be said of the two next species, and some continental ones, especially *V. acinifolia.*

18. V. *triphýllos*, Linn. (*blunt-fingered Speedwell*); leaves broadly ovate incised, lowermost ones petiolate, upper or bracteas sessile digitate, the segments obtuse, flowers subracemose, the pedicels longer than the bracteas or the calyx. *Engl. Bot. t.* 26. *Engl. Fl. v. i. p.* 25.

Rare; in sandy fields, about Bury and on the confines of Norfolk and Suffolk. Yorkshire? *Mr. Tofield. Fl.* Apr. ⊙.— 3—4 inches high, with spreading branches. *Flowers* a very deep blue, the lowermost often on very long pedicels.

H. 19. V. *vérna*, Linn. (*vernal Speedwell;*) leaves inciso-pinnatifid, the upper ones or bracteas lanceolate entire, flowers subracemose, pedicels shorter than the calyx. *Engl. Bot. t.* 25. *Engl. Fl. v. i. p.* 26.

Very rare. Discovered about Bury and Thetford, Suffolk, by *Sir John Cullum, Bart. Fl.* April. ⊙.—A very small, upright, scarcely branching plant, allied to *V. arvensis.*

3. PINGUÍCULA. *Linn.* Butterwort.

Cal. 2-lipped, upper lip of 3, lower of 1, bifid segment. *Cor.* ringent; spurred. *Germen* globose. *Stigma* large, of 2 unequal plates or lobes. *Caps.* one-celled, with the seeds attached to a central receptacle.—*Nat. Ord.* LENTIBULARIÆ. *Rich.*—Name from *pinguis, fat;* the leaves being thick and greasy to the touch.

H. 1. P. *vulgáris,* Linn. (*common Butterwort*), spur subulato-cylindrical, as long as the veinless limb of the corolla, whose segments are very unequal rounded even and all entire. *Engl. Bot. t.* 70. *Hook. Scot. i. p.* 8. *Engl. Fl. v. i. p.* 28.

Bogs, moist banks, and heaths; most abundant in the North. *Fl.* June. ♃.—*Foliage* covered with minute raised crystalline points, all radical, fleshy, the margins involute. *Scapes* single-flowered. *Flowers* purple, very handsome, drooping; palate covered with white, compactly jointed hairs. *Anthers* 1-celled, vertical, placed just beneath the large horizontal plate or lobe of the stigma. *Style* short. *Caps.* ovate, one-celled, bursting half way into 2 valves. *Seeds* numerous, oblong, rough.—The leaves are said to coagulate milk, whence the English name.

H. 2. P. *grandiflóra,* Willd. (*large-flowered Butterwort*); spur notched subulato-cylindrical as long as the veined limb of the corolla, whose segments are very unequal truncated, the middle one of the lower lip notched. *Engl. Bot. t.* 2184. *Engl. Fl. v. i. p.* 29.

Western part of the county of Cork, in marshy ground; *Mr. Drummond. Fl.* May. ♃.—This plant, apparently as rare upon the continent as in Britain, and perfectly distinct from the *P. vulgaris,* may be easily cultivated for a succession of years. As in the *P. vulgaris,* the old leaves die away in winter, and buds or hybernacula are formed, which expand into perfect plants in the spring. Few plants can exhibit a more beautiful appearance, early in spring, than a cluster of P. *grandiflora,* blossoming under the shelter of a common frame. It is a mass of large deep and rich purple coloured flowers, well contrasted by the pale but bright hue of the leaves.

H. 3. P. *lusitánica,* Linn. (*pale Butterwort*); spur cylindrical obtuse decurved shorter than the almost equal limb of the corolla, leaves veiny, and as well as the scape hairy. *Engl. Bot. t.* 145. *Hook. Scot. i. p.* 8. *Engl. Fl. v. i. p.* 28.

Marshy places and wet moors, but mostly confined to the west side of the kingdom. Never, I believe, found on the east side, rarely, if ever, in the interior. Plentiful in the Hebrides and north of Ireland: but most abundant in the extreme north of Scotland, near Cape Wrath, growing among *Jungermannia cochleariformis* and *Arbutus alpina. Fl.* June, July. ♃.—Much smaller than the two last, with very pale purplish yellow flowers; and leaves of a thin, not succulent, texture.

4. P. alpina. Linn. Alpine Butterwort. Spur conical, shorter than the unequal limb of the corolla, and curved towards the lower retuse lip, scape glabrous.

4. Utriculária. *Linn.* Bladderwort.

Cal. 2-leaved, equal. *Cor.* personate, spurred. *Stigma* 2-lipped. *Caps.* globose, of 1 cell. *Seeds* fixed to a central receptacle. —*Nat. Ord.* Lentibulariæ. *Rich.*—Name from *Utriculus*, a little bladder.[1]

H. 1. U. *vulgáris*, Linn. (*greater Bladderwort*); spur conical, upper lip as long as the projecting palate, leaves pinnato-multifid. *Engl. Bot. t.* 253. *Hook. Scot. i. p.* 8. *Engl. Fl. v. i. p.* 30.

Ditches and deep pools, not unfrequent. *Fl.* June, July. ♃.—*Roots* much branched. Shoots or runners floating horizontally in the water, clothed with capillary multifid leaves, bristly at the margin and bearing little cristate bladders. *Scape* erect, 4—6 inches high, with 6—8 bright yellow flowers in a raceme. Lower lip convex, much larger and broader than the upper one, and having a projecting palate, closing the mouth. *Spur* short deflexed. *Filaments* curved, thick, resembling those of *Pinguicula*. *Stigma* large.

2. U. *intermédia*, Hayne, (*intermediate Bladderwort*); spur conical, upper lip twice as long as the palate, leaves tripartite, the segments linear dichotomous. *Engl. Bot. t.* 2489. *Hook. Scot. i. p.* 9. *Engl. Fl. v. i. p.* 30.

Ditches and deep pools, much less frequent than the preceding. It appears to have been only found with certainty about Dublin and Bantry, in Ireland, and in Rescobie Lake, Forfar. *Fl.* June, July. ♃.—This has probably been passed by as the *U. vulgaris*: but the flowers are smaller, of a paler yellow, and have a longer lip. The stems are more leafy, and the bladders proceed from branched stalks, not from the leaves. It propagates itself by buds or gemmæ which proceed from the ends of the shoots as does *U. minor*, and perhaps *U. vulgaris*.

H. 3. U. *mínor*, Linn. (*lesser Bladderwort*); spur extremely short obtuse keeled, upper lip as long as the palate, leaves subtripartite, the segment linear dichotomous. *Engl. Bot. t.* 254. *Hook. Scot. i. p.* 9. *Engl. Fl. v. i. p.* 31.

Ditches and pools, rare, though not unfrequent in many parts of Scotland, extending its range even to Skye. *Fl.* June, July. ♃.—Smaller than the last. *Vesicles* mixed with the leaves, which latter are glabrous at the margin. *Flowers* very pale yellow, and small. *Spur* scarcely any. Lower *lip* almost plane; palate scarcely closing the mouth, not projecting beyond the lip.

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[1] The British species of this Genus are all aquatics: and the roots, stems and even leaves are furnished with numerous, membranaceous, reticulated *vesicles*, which, according to Hayne, are filled with water, till it is necessary the plant should rise to the surface and expand its blossoms above the fluid. The vesicles are then found to contain only air, by aid of which the plant floats: this air again in the Autumn gives place to water, and the plant descends to ripen its seeds at the bottom of the water. Aquatic insects are often seen in these bladders. Mr. Wilson observes, on those of U. *vulgaris*, that "they have *an orifice closed by an elastic valve, opening inwards*, and of much thinner texture than the bladder, to which it is attached, where the crest is placed. Insects often enter these bladders, and are, of course, confined there."

*** *Perianth double, inferior, monopetalous, irregular. Seeds 4, apparently naked, (closely covered by the pericarp, Gymnospermous.)*

5. Lýcopus. *Linn.* Gipsy-wort.

Cal. tubular, 5-cleft. *Cor.* tubular, *limb* nearly equal, 4-cleft, upper segment broader, and notched. *Stam.* distant, simple.—*Nat. Ord.* Labiatæ. *Juss.*—Name from λυκος, a wolf, and πȣς, a foot, from a fancied resemblance in the cut leaves of the plant, to a wolf's paw. *Der Wolfsfuss*, in Germ. In English *Gipsy-wort*, because the plant yields a black dye, which is employed by the Gipsies to render their skin darker.

H. 1. L. *europǽus*, Linn. (*common Gipsy-wort, or Water Horehound*); leaves deeply and irregularly pinnatifido-serrated. *Engl. Bot. t.* 1105. *Hook. Scot. i. p.* 9. *Engl. Fl. v. i. p.* 34.

Ditches and river banks; less frequent in Scotland. *Fl.* June, July. ♃.—*Stems* 2 feet high, erect, four-sided as in the class *Didynamia*, Ord. *Gymnospermia*, to which very natural groupe, this and the following Genus belong, though they are placed here in consequence of their having but two stamens. *Leaves* opposite, nearly sessile, ovato-lanceolate, wrinkled, very deeply sinuato-serrate, almost pinnatifid. *Flowers* small, sessile, in dense *whorls* at the base of the superior leaves, whitish with purple dots, hairy within.

6. Sálvia. *Linn.* Sage or Clary.

Cal. 2-lipped, tubular. *Cor.* labiate, the tube dilated upwards and compressed. *Filaments* with two divaricating branches, one only bearing a perfect, single *cell* of an *anther*.—Nat. Ord. Labiatæ. *Juss.*—Name from *Salvo*, to *save* or *heal*, in allusion to its balmy or healing qualities.

H. 1. S. *praténsis*, Linn. (*Meadow Clary or Sage*); lower leaves cordate-oblong irregularly crenate stalked, those of the stem sessile semiamplexicaul, bracteas very small, corolla thrice as long as the calyx glandular and viscid at the summit. *Engl. Bot. t.* 153. *Engl. Fl. v. i. p.* 34.

Dry meadows and about hedges, but rare; near Cobham in Kent. *Fl.* July. ♃.—Varying in size, from 6 inches to 2 feet high. Commonly cultivated in gardens. I have never seen native specimens.

H. 2. S. *verbenáca*, Linn. (*Wild English Clary or Sage*); leaves sinuated and serrated, corolla much narrower and scarcely longer than the calyx. *Engl. Bot. t.* 154. *Hook. Scot. i. p.* 10. *Engl. Fl. v. i. p.* 35.

Dry pastures and banks, especially in a chalky or gravelly soil: not uncommon in England; but only found about Edinburgh in Scotland. *Fl.* June, July. ♃.—One to two feet high. Lower *leaves* petiolate, ovate, upper ones sessile and acute, less lobed, but more serrated: all wrinkled with veins. *Bracteas* 2, under each whorl of flowers, cordate, acute, entire, ciliated. *Cal.* hairy, segments mucronate. *Cor.* small in proportion to the calyx, purple. *Upper lip* concave, compressed: *lower* 3-lobed, its middle lobe large.

**** *Perianth double, superior.*

7. Circǽa. *Linn.* Enchanter's Nightshade.

Cal. 2-leaved, but united into a short tube at the base. *Cor.* of 2 petals. *Caps.* 2-celled. Cells 1-seeded.—*Nat. Ord.* Onagrariæ. *Juss.*—Name from the Enchantress *Circe*, either from the prettiness of its flowers, or as some say, from growing in damp shady places, where plants used for incantations are found.

H. 1. C. *lutetiána*, Linn. (*common Enchanter's Nightshade*); stem erect pubescent, leaves ovate acuminate toothed opaque longer than the petiole. *Engl. Bot. t.* 1056. *Hook. Scot. i. p.* 4. *Engl. Fl. v. i. p.* 15.

Woods and Coppices in shady situations, common. *Fl.* June, July. ♃.—*Root* creeping. *Stem* 1—1½ foot high. *Leaves* scarcely cordate at the base, upper ones narrow-ovate. *Racemes* as well as the stems more or less branched. *Flowers* white or rose-coloured. *Calycine* leaflets reflexed. *Petals* obcordate, patent. *Germen* very hispid, the hairs hooked at the extremity. Found in Canada and in Nepal.

H. 2. C. *alpína*, Linn. (*Alpine Enchanter's Nightshade*); stem ascending, nearly glabrous, leaves cordate toothed shining as long as the petioles. *Engl. Bot. t.* 1057. *Hook. Scot. i. p.* 4. *Engl. Fl. v. i. p.* 16.

β. *major*, larger and more pubescent. *Engl. Fl. v. i. p.* 16.—*C. intermedia. Ehrh.*

Woods and coppices and stony places, especially by the sides of lakes in the north of England and Scotland. β. In similar situations. (*Smith*).—*Fl.* July, Aug. ♃.—This comes very near it must be confessed to the preceding: but it is much smaller, the leaves decidedly cordate and the petioles longer. *Fruit* which is abundant on C. *lutetiana*, I have never observed on this plant. The flowers are the same in both, as to structure and colour. I have not seen the var. β. of Smith in this country; H. but if it be the same as the C. *intermedia* of continental authors, it is quite true that, though larger in the stem and leaves, it yet accords with the essential character of our C. *alpina*.

***** *Perianth single or none.*

8. Fráxinus. *Linn.* Ash.

Cal. 0. or 4-cleft. *Cor.* 0. or of 4 petals. *Caps.* 2-celled, 2-seeded, compressed and foliaceous at the extremity. *Seeds* solitary, pendulous. (Some flowers without stamens.) *Nat. Ord.* Oleineæ. *Hoffmansegg* and *Link.*—Name from φραξις, a separation, in allusion to the facility with which the wood may be split.

1. F. *excélsior*, Linn. (*common Ash*); leaves pinnated, leaflets ovato-lanceolate acuminate serrated, flowers without either calyx or corolla. *Engl. Bot. t.* 1692. *Hook. Scot. i. p.* 3. *Engl. Fl. v. i. p.* 14.

β. *heterophylla; (simple-leaved Ash);* leaves simple and pinnated. *F. heterophylla. Vahl.—Engl. Bot. t.* 2476. *Engl. Fl. v. i. p.* 14.—*F. simplicifolia. Willd.—F. excelsior var.* 2. *With.*

Woods and hedges throughout the country. β. Rare in England. *Smith.* I have specimens from *Mrs. Griffith* gathered in Devonshire. *Fl.* in April and May, before the leaves appear. ♄.—One of the noblest of our trees, remarkable in old plants for the curving upwards of the extremities of the lower pendent branches. There are many varieties. The *weeping Ash* is said to have been first discovered in a field at Gamlingay. By Loch Lomond side the trees vary much in the width of the leaflets, some have them all ovate, others quite lanceolate. The *F. heterophylla* may be considered a sort of monstrosity, often having the leaflets united so as to form one single leaf. The *flowers* are very simple. There is no *calyx*, no *corolla.* The *pistil* and *stamens*, often one of each, are sometimes separated, and rise at once from the extremity of the flower-stalk.—The wood is very valuable for many purposes, especially for implements of husbandry, the young copse wood for making hurdles, and the older for hop-poles. The roots are injurious to pastures by their spreading to so great an extent, and extracting the nourishment from the soil.

9. Lémna. *Linn.* Duckweed.

Perianth single, monophyllous, membranaceous, urceolate. *Fruit* utricular.

Fronds *without distinct stem or leaves, floating on the surface of the water, and increasing not only by seeds, but, far more abundantly, by* gemmæ *or* buds, *concealed in lateral clefts of the parent frond, which, growing out, on two opposite sides, into new plants, and they again producing offspring in the same way, while still attached to their parent, present a most curious appearance.*[1]—*Nat. Ord.* Pistiaceæ. *Rich.*—Name, λεμμα, of the Greeks, from λεπις, a scale.

H. 1. L. *trisúlca*, Linn. *(Ivy-leaved Duckweed);* fronds thin elliptico-lanceolate caudate at one extremity at the other serrated, roots solitary. *Engl. Bot. t.* 926. *Hook. Scot. i. p.* 10. *Engl. Fl. v. i. p.* 32.

Clear stagnant waters. Less frequent in Scotland than in England. *Fl.* June, July. ⊙.—*Fronds* $\frac{1}{2}$ to $\frac{3}{4}$ of an inch in length, pellucid at the margins, reticulated. *Roots* solitary, tipped at the extremity, as are those of the rare and beautiful aquatic, *Pontederia azurea*, with a small *sheath.*

2. L. *mínor*, Linn. *(lesser Duckweed);* fronds nearly ovate compressed, roots solitary. *Engl. Bot. t.* 1095. *Hook. Scot. i. p.* 11. *Engl. Fl. v. i. p.* 32.

Stagnant waters, common.—*Fl.* July. ⊙.—About a line or a line and a half long; of a rather thick, succulent, but compact texture, slightly convex beneath. This is the most abundant of all the species, covering the surface of ditches and harbouring numerous insects and molluscæ, the food of ducks and other waterfowl, whence the English name of *Duckweed.* The young fronds constitute the *Lemna arhiza* of the French authors. The *capsule* is single-seeded; *seed* transverse, with its hilum "directed towards the narrow end of the frond." (*Wilson.*)

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[1] For a more complete analysis and history of this genus than I am here able to give, see *Lemna minor, trisulca* and *gibba* in the new Series of Flora Londinensis, and for an admirable account of the germination of the seeds of the latter species, see a Memoir by W. Wilson, Esq. in Part II. of the *Botanical Miscellany.*

3. L. *polyrhíza*, Linn. (*greater Duckweed*); fronds obovato-rotundate compressed, roots numerous clustered. *Engl. Bot. t.* 2458. *Hook. Scot. i. p.* 11. *Engl. Fl. v. i. p.* 33.

Stagnant waters. *Flowers* unknown in Britain. ⊙.—The largest of all the species, half an inch long and nearly as broad, succulent, firm, faintly striated; a little convex below, where, and at the margin above, it is of a deep purple colour. *Roots* numerous from a central point. The fructification of this species is a great desideratum.

H. 4. L. *gíbba*, Linn. (*gibbous Duckweed*); fronds obovate nearly plane above, hemispherical beneath, roots subsolitary. *Engl. Bot. t.* 1233. *Hook. Scot. i. p.* 2. *Engl. Fl. v. i. p.* 32.

Stagnant water, but not very frequent. Rare in Scotland. *Fl.* June—Sept. ⊙.—Size of *L. minor*, but readily distinguished by the gibbous or even hemispherical lower surface, which is moreover white, pellucid, and beautifully cellular, the cells filled with air, (*Wilson*): upper side plane, green, opaque. "*Capsule* four-seeded. *Seeds* furrowed, not transversely placed, but with the hilum towards the top of the capsule." *Wilson.*

10. Cládium. *Schrad.* Twig-rush.

Perianth single, glumaceous. *Glumes* of one piece or valve, 1-flowered, imbricating; outer ones sterile. *Fruit*, a *nut* with a loose external coat, destitute of bristles at the base.—*Nat. Ord.* Cyperaceæ. *Juss.* Name from κλαδος, a *branch*, so called, perhaps, from the many branches bearing spikelets.

H. 1. C. *Maríscus*, Br. (*prickly Twig-rush*); panicle much divided leafy, spikelets capitato-conglomerate, stem rounded leafy, margins of the leaves and keel rough. *Engl. Bot. t.* 950. (*Schœnus Mariscus. L.*) *Hook. Scot. i. p.* 2. *Engl. Fl. v. i. p.* 36.

Boggy and fenny places in several parts of England, as in Norfolk, Cambridge, &c.; Cheshire. *Mr. Wilson.* In Scotland it is now extinct, since the draining of the Moss of Restenat, where it grew with *Eriophorum alpinum.*—*Fl.* July, Aug. ♃.—In habit very different from *Schœnus*, as is the fruit. *Plant* 3—5 feet high, leafy: *Leaves* rough almost prickly at the margin and keel. *Glumes* ovate, brown, 6—7 in an ovate spikelet; inner ones the longest, generally the two or sometimes three innermost ones floriferous; of which one ("sometimes 2, more rarely all," *Wilson*) bears a coated *nut*, almost as large as the spikelet. *Stigmas* generally two, sometimes cloven (*Wilson*).

(*See* Salicornia in Cl. I.)

ORD. II. DIGYNIA. 2 *Styles.*

11. Anthoxánthum. *Linn.* Vernal-grass.

Cal. of 2 valves, glumaceous, 1-flowered. *Cor.* double, each of

2 valves, the *ext.* awned; the *interior* one small, awnless.—*Nat. Ord.* GRAMINEÆ. *Juss.*—Name from ανθος a flower, and ξανθος, yellow: from the yellowish hue of the spikes especially in age.

1. *A. odorátum*, Linn. (*Sweet-scented Vernal-Grass*); panicle spiked oblong, flowers upon partial stalks and longer than their awns. *Engl. Bot. t.* 647. *Hook. Scot. i. p.* 2. *Engl. Fl. v. i. p.* 37.

Meadows, woods, and pastures abundant, often very alpine. *Fl.* May, June. ♃.—A foot high, yielding an agreeable smell in the act of drying, like that of *Woodruff (Asperula odorata)*, and giving the well-known scent to new-made hay. *Leaves* short. *Panicle* compact, spiked, yellow in age. *Valves* of the calyx very unequal: this calyx Mr. Brown justly considers as 3-flowered, and what are here called the two outer valves of a double corolla, as two imperfect outer and lower flowers, each reduced to a single awned valve; while the two inner awnless valves constitute a central perfect flower. Stamens only 2, in which particular it differs from all our other grasses. Mr. Wilson observes, that the germen is spurred at the base, and that there is no scale there, as in most other grasses.

III. TRIANDRIA. 3 *Stamens.*

ORD. I. MONOGYNIA. 1 *Pistil.*

* *Flowers superior.* Gen. 1—5.

1. VALERIÁNA. *Linn.* Valerian.

Cal. a thickened margin to the top of the germen, at length unfolding into a feathery *pappus*. *Cor.* monopetalous, 5-cleft, gibbous or spurred at the base. *Fruit* 1-seeded, crowned with the feathery *pappus*.—*Nat. Ord.* VALERIANEÆ. *DeC.*—Name from *Valeo*, to be powerful, on account of the medicinal effects.

1. V. *rúbra*, Linn. (*red Valerian*); corolla with a long spur, stam. 1, leaves ovato-lanceolate. *Engl. Bot. t.* 1532. *Hook. Scot. i. p.* 14. *Engl. Flora, v. i. p.* 42.

Chalk pits and old walls: but probably originally the outcast of gardens. Chalk-pits in Kent apparently wild, and certainly very abundant. Its native country is the south of Europe. *Fl.* June—Sept. ♃. —One foot or more high, glabrous, somewhat glaucous, entire or slightly toothed. *Leaves*, as in all the species of this and the following genus, opposite. *Flowers* fine deep rose-colour, arranged in numerous uni-lateral corymbose spikes. This constitutes *Centranthus* of De C. and assuredly is a good genus, which I have retained here on account of its affinity with the Valerians. For, if separated from them, it must be referred to another Class, MONANDRIA.

2. V. *díoica*, Linn. (*small marsh Valerian*); flowers diœcious, *Cor.* gibbous at the base, root-leaves ovato-spathulate, those of the stem lyrato-pinnatifid. *Engl. Bot. t.* 628. *Hook. Scot. i. p.* 15. *Engl. Fl. v. i. p.* 43.

Marshy meadows frequent. *Fl.* June. ♃.—*Stem* 6—8 inches high. *Leaves* more or less serrated. *Flowers* pale rose-colour.

H. 3. V. *officinális*, Linn. (*great wild Valerian*) corolla gibbous at the base, leaves all pinnated, leaflets lanceolate nearly uniform serrated. *Engl. Bot. t.* 698. *Hook. Scot. i. p.* 15. *Engl. Fl. v. i. p.* 43.

Ditches, sides of rivers and moist woods, abundant. *Fl.* June, July. ♃.—Roots tuberous, warm, aromatic and employed in medicine, as those of the φου of Dioscorides, *V. Dioscoridis Sm.* which is not the *V. Phu* of Linn. Cats are very fond of these roots, and the scent attracts rats. The leaves are much used by the poor as an application to fresh wounds; hence the plant has received the name of *all-heal.* Whole plant 2—4 feet high; *Stems* striated. Lower *leaves* on long footstalks. *Flowers* pale flesh-colour.

4. V. *pyrenáica*. Linn. (*heart-leaved Valerian*) corolla gibbous at the base, leaves heart-shaped dentato-serrate petiolate, upper ones with one or two pair of small lanceolate leaflets. *Engl. Bot. t.* 1591. *Hook. Scot. i. p.* 15. *Engl. Fl. v. i. p.* 44.

Woods in Scotland, but surely not an aboriginal native. It is peculiar I believe to the Pyrenées, but, being frequently cultivated in gardens and the seeds very volatile, like those of the Syngenesious plants, it is not wonderful that it should naturalize itself in other countries. *Fl.* June, July. ♃.—Habit of *V. officinalis*, but very different in its foliage.

2. Fédia. *Vahl.* Corn-sallad.

Cal. small, unequally toothed, crowning the fruit. *Cor.* monopetalous, 5-cleft, gibbous at the base. *Capsule* indehiscent, 3-celled, 3-seeded; 2 *cells* generally abortive.—*Nat. Ord.* Valerianeæ. *DeC.*—Name of Adanson, but whose meaning is not accurately known: according to Smith, *Fedus* is synonymous with *Hædus*, a *kid.*

H. 1. F. *olitória*, Vahl, (*common Corn-Sallad or Lamb's Lettuce*); capsule subglobose inflated, with 3 obscure inflexed teeth glabrous, flowers capitate. *Engl. Bot. t.* 811 (*Valeriana Locusta L.*) *Hook. Scot. i. p.* 15. *Engl. Fl. v. i. p.* 45.

Banks and corn fields, especially in a light soil. *Fl.* April—June. ⊙.—3 inches to a foot high, dichotomous, more or less rough. *Root leaves* spathulate, those of the *stem* oblong, obtuse, entire or with the upper ones a little toothed. *Flowers* pale blue, in terminal compact heads, at the base of which are linear-oblong, often divided bracteas, forming a kind of *involucre*. Frequently cultivated as a sallad. The two empty cells of the fruit are singularly inflated.

H. 2. F. *dentáta*, Vahl, (*smooth narrow-fruited Corn-Sallad*); capsule ovate acuminate glabrous ribbed with 1 large and 2 smaller upright teeth, flowers corymbose, peduncles with a sessile axillary flower. *Engl. Bot. t.* 1370. (*Valeriana dentata. Willd.*). *Hook. Scot. i. p.* 15. *Engl. Fl. v. i. p.* 45.

Corn-fields and hedge-banks, but not common. Cornwall, Essex and Cambridgeshire, and about Edinburgh. North Wales. *Mr. Wilson.*—

Fl. June, July. ♃.—Perhaps often confounded with the last, from which it is perfectly distinct. *Leaves* narrower, the upper ones more toothed and even pectinated. *Flowers* flesh-colour. *Fruit* obpyriform, convex on the back where is the larger and perfect cell, nearly plane in front, where are the two abortive cells: and these are shrunk so as to form two projecting lines or ribs; these are terminated by two small subulate teeth; between them is often another little tooth, while the perfect cell is lengthened out into a large broad and sharp tooth, which has generally at its base two smaller slightly inflexed teeth, one on each side. The whole fruit is perfectly glabrous.

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3. F. *míxta*, Vahl, (*sharp rough-fruited Corn-Sallad*); capsule ovato-acuminate, clothed with spreading incurved rigid hairs obscurely ribbed, with one large and two smaller upright teeth, flowers corymbose, peduncles with a sessile axillary flower. *Vahl. Enum. v. ii. p.* 21. *Dufrêsne Hist. Val. p.* 58. *t.* 3. *f.* 6. (*Valerianella mixta*).—*Valerianella microcarpa. Loisel.*

Hedge-bank, near Halesworth, Suffolk.—*Fl.* June. ⊙.—This I found many years ago in the station just mentioned, when I looked upon it as a hairy fruited var. of *F. dentata*, and I have seen no other British specimen: but I have received the same plant from various continental Botanists, and find it to be well described and figured (the fruit at least) by *Dufrêsne*. The difference indeed lies wholly in the fruit, but this is so remarkable, and so constant in all the specimens I have seen, that I have no hesitation in considering the species truly distinct.

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4. F. *eriocárpa*, Roem. et Sch. (*blunt rough-fruited Corn-Sallad*); capsule crowned with the prominent cup-shaped oblique membranous unequally 5-toothed calyx, and clothed with patent incurved rigid hairs, flowers corymbose, peduncles with a sessile axillary flower. *Desv. Journ. Bot.* 1809. *p.* 314. *t.* 11. *f.* 2. and *Dufrêsne Hist. Val. p.* 39. *t.* 3. *n.* 4. (*Valerianella erioc.*)

Discovered at Ormeshead, Caernarvonshire, by *Mr. Wilson*, in 1828.—*Fl.* June. ⊙.—Should there be any doubt entertained as to the validity of the preceding species, there can I think be none respecting this. The *calyx* in the fruit is expanded into a membranous or cartilaginous oblique blunt cup, with 6 distinct teeth, the upper one the largest, the rest gradually smaller: it forms in fact a broad mouth to the top of the fruit. First noticed by M. Desvaux about Poictiers, in France, and his figure is admirably characteristic of our Welsh specimens, especially the fruit; which, nevertheless, Professor Mertens criticises in his excellent *Flora Germanica*.

*

3. Crócus. *Linn.* Crocus.

2 * *Perianth* coloured; *tube* very long; limb cut into 6 equal segments. *Stigmas* 3-lobed, plaited.—*Nat. Ord.* Irideæ. *Juss.*—Name from κροκη, a *thread* or filament, from the appearance of the saffron of the shops, which is the dried stigmas of *Crocus sativus.*

1. C. *satívus*, Linn. (*Saffron Crocus*); stigma protruded drooping, in three deep linear divisions. *Engl. Bot. t.* 343. (*Crocus autumnalis*). *Engl. Fl. v. i. p.* 46. +Zahfaran = yellow. Arabic.

* Fedia Auricula. see Appendix 2.

*. Fedia carinata – App. 32.

Naturalized in meadows, having been cultivated abundantly, and still is about Saffron Walden in Essex, for the sake of the fragrant *stigmas* which constitute *saffron*. *Fl.* Sept. ♃. in large [illegible]

2. C. *vérnus*, Willd. (*purple Spring Crocus*); stigma erect within the flower cut into 3 jagged wedge-shaped lobes. *Engl. Bot. t.* 344. *Engl. Fl. v. i. p.* 46.—C. *sativus* β. *Linn.*

Meadows and fields, naturalized. About Nottingham, plentiful. *Fl.* March. ♃. minimus. Red. Least

3. C. ~~*reticulátus*~~, ~~Bieb.~~ (~~*Net-rooted*~~ *Crocus*); stigma erect within the flower in 3 linear-clavate jagged segments ~~nearly equal~~ longe than ~~in height with~~ the stamens, coats of the bulb ~~strongly and coarsel~~y membr ~~reticulated.~~ raceo *Bieb. Fl. Taur. Cauc. p.* 28. *Bieb. Cent. Pl. Rar. Ross. Mer. p.* 1. *t.* 1. *Engl. Fl. Add. v. iv. p.* 262.—C. *susianus. Kerr in Bot. Mag. t.* 652. See erra

In Sir Henry Bunbury's Park at Barton, Suffolk, *Mr. D. Turner.*—*Fl.* March. ♃.—A beautiful species, but with less right to be considered a native of Britain than any. I am indebted for my specimens to R. Bevan, Esq. of Bury, who found C. *aureus* growing along with it; both evidently the outcast of gardens. It is admirably figured in the rare and splendid *Centuria Plantarum Rossiæ Meridionalis* of Marschal Bieberstein. In Tauria, the Caucasus and the Ukraine, it is truly wild and varies with golden and purple flowers, always however streaked with deep purple. Our Barton specimens have an orange ground: Sir James Smith's were purple.

4. C. *nudiflórus*, Sm. (*naked-flowering Crocus*); stigma erect within the flower in 3 deeply laciniated tufted segments, equal in height with the stamens, flowers appearing before the leaves. *Engl. Bot. t.* 491. *Engl. Fl. v. i. p.* 47.

Between Nottingham Castle and the Trent. *Fl.* Oct. ♃.—Flowers pale purple. I have specimens from the station now mentioned sent by Dr. Jowitt, which precisely accord with the plant of Engl. Bot. But another species is found by Mr. Wilson in meadows near Warrington equally an autumnal flowering plant, and the flowers appearing before the leaves;—having the lobes of the capillaceo-multifid stigma much exceeding the stamens in length. I have the same plant too from the neighbourhood of Halifax. This is the *C. speciosus* of Marschal Bieberstein, as I have ascertained by a comparison with an authentic specimen in my Herbarium. That author too notices, in his *Flora Taurico-Caucasica*, the characters which distinguish it from Smith's *C. nudiflorus.*—I will not augment the list of British species of Crocus, by adding another naturalized plant, but content myself with noticing it in this place.

In all this Genus the Germen is concealed under ground, elevated by a short peduncle from the root, which peduncle elongates, after the decay of the flower, and the capsules appear above ground.

* 4. TRICHONÉMA. *Ker.* Trichonema.

Perianth petaloid, in 6, deep, equal segments; *tube* shorter than the limb. *Filaments* hairy. *Stigma* bipartite, slender. *Seeds* globose.—*Nat. Ord.* IRIDEÆ. *Juss.* Name from θριξ, a *hair*, and νημα, a filament.

* Crocus aureus - Appendix - 3 -
11. Crocus speciosus -Appendix. 4

See ppendix -5

Columnæ Columna's

1. T. ~~*Bulbocódium*~~, Ker. (~~*channel-leaved*~~ *Trichonema*); ~~leaves linear-filiform longer than the scapes, spatha longer than the tube, segments of the limb acute striated.~~ *Engl. Bot. t.* 2549. (*Ixia Bulbocodium*). *Engl. Fl. v. i. p.* 48.

Grassy hillocks in Guernsey. *Fl.* March, April. ♃. A small bulbous plant, with purplish *flowers*, often inclining to yellow.

5. Iris. *Linn.* Iris or Flower de Luce.

Perianth single, petaloid, 6-cleft, each alternate segment longer and reflexed. *Stigmas* 3, petaloid, covering the stamens.—*Nat. Ord.* Irideæ. *Juss.*—Name from the beautiful and varied colours of the flowers.

H. 1. T. *pseud-ácorus*, Linn. (*yellow Water-Iris or Corn-flag*); leaves sword-shaped, perianth beardless, its inner segments smaller than the stigma. *Engl. Bot. t.* 578. *Hook. Scot. i. p.* 16. *Engl. Fl. v. i. p.* 48.

β. *citrina.* flowers smaller, segments of the perianth narrower, the inner ones more acute, stem taller. *Iris Pseud-acorus* β. *Bot. Mag. t.* 2239.

Watery places and wet meadows and woods, frequent.—β. found in Ayrshire by *Mr. James Smith* of Ayr. *Fl.* June, July. ♃.—*Flowers* large, deep yellow in α. much paler in β. *Root* large, horizontal, very acrid. A piece of it held between the teeth is said to cure the toothache, and is otherwise used medicinally, and also for giving a black dye, and making ink. The *seeds*, when roasted, are recommended as a substitute for coffee.

H. 2. I. *fœtidíssima*, Linn. (*stinking Iris*); leaves sword-shaped, perianth beardless, its inner segments spreading, about as large as the stigmas, stem one-angled. *Engl. Bot. t.* 596. *Engl. Fl. v. i. p.* 49.

Woods, thickets and pastures; frequent in the southern and western parts of England, rare in the middle and northern counties: not known, in a wild state, in Scotland. *Fl.* May. ♃.—*Flowers* much smaller than the last, dull livid purple. The *leaves*, when bruised, yield a very disagreeable smell, which some have compared to roast-beef, whence its common English name, *Roast-beef plant.* In Devonshire it is so frequent that you can hardly avoid walking among it, when herborizing, and being annoyed by the smell.

** *Flowers inferior, glumaceous,*[1] (*dry and chaffy*). *Seed one.* Gen. 6—13.

6. Cypérus. *Linn.* Cyperus or Galingale.

Spikelets two-ranked, many-flowered; *glumes* of one valve, keeled, mostly all fertile, equal. *Bristles* none. *Style* continuous and deciduous.—*Nat. Ord.* CYPERACEÆ. *Juss.*—Name from κυπειρος of the Greeks, which was given to one of this genus.

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[1] This little groupe (with the exception of *Nardus* which is a grass) together with *Cladium* in the 2d Class and *Kobresia* and *Carex* in the 21st, constitute the Nat. Ord. *Cyperaceæ:* and the structure of the flowers is so different from that of our other British plants, that the same terms can hardly be applied to their coverings. They are collected into little *spikes*, and each within a chaffy

H. 1. C. *lóngus*, Linn. (*sweet Cyperus or English Galingale*); spikelets linear-lanceolate erecto-patent in doubly compound umbels, general involucre very long leafy, partial small, stem triangular. *Engl. Bot. t.* 1309. *Engl. Fl. v. i. p.* 53. J. of

Very rare. Marsh near St. David's and at Walton in Gordon, Somersetshire. *Fl.* July. ♃.—*Root* very aromatic and astringent.

2. C. *fúscus*, Linn. (*brown Cyperus*); spikelets linear-lanceolate fasciculato-corymbose, glumes patent, involucre of 3 unequal leaves, stem triangular, stigmas 3. *Hook. in Fl. Lond. new series, t.* 85. *Engl. Fl. v. i. p.* 54.

Marshes very rare. Meadows near Little Chelsea, where it was discovered by *Mr. Haworth*. *Fl.* Sept. ☉. A small plant, only a few inches high.—Of the Genus *Cyperus*, 237 species are described in Sprengel's Syst. Vegetabilium. Most of them are tropical: they gradually diminish in number as we recede from the tropics: so that, though 2 species are natives of England, none is found in Scotland.

7. SCHŒNUS. *Linn.* Bog-rush.

Spikelets two-ranked, 1—3 flowered, outer *glumes* smaller, empty. *Bristles* small or none. *Style* deciduous.—*Nat. Ord.* CYPERACEÆ. *Juss.*—Name from χοινος, or σχοινος, a cord, because a kind of cordage was anciently made from plants of this tribe.

H. 1. S. *nígricans*, Linn. (*black Bog-rush*); stem rounded, spikelets collected into a rounded head shorter than the outer bracteas. *Engl. Bot. t.* 1121. *Hook. Scot. v. i. p.* 16. *Engl. Fl. v. i. p.* 50.

Wet moors and boggy places. In Scotland rare, except on the West coast. *Fl.* June, July. ♃.—Remarkable for its rigid habit, nearly setaceous leaves, and the dark brown almost black heads of flowers. The *style* is jointed upon the germen and darker than it. "*Bristles* small, reddish brown, spiny, the spines pointing upwards; attached to the receptacle, as Smith observes, but certainly placed on the outside of the filaments,—which is the case also in various species of *Scirpus*, and, as I am inclined to believe, in all cases where bristles are to be found at all." (*Mr. Wilson*).

8. RHYNCHÓSPORA. *Vahl.* Beak-rush.

Spikelets few flowered, the *glumes* of one valve, imbricated on all sides, the lower ones smaller empty. *Bristles* several, included, inversely toothed. *Style* subulate, bifid, spreading at the base. *Nut* crowned with the persistent more or less articulated *style*.—

scale, here called, as in Engl. Flora, a *Glume*, (*bractea* in Lindl. Syn.), within this is often another covering (the true *perianth*,) membranous and urceolate in *Carex*, in the present groupe consisting of hairs or bristles, which accompany the fruit, and are called hypogynous; but Mr. Wilson has proved that they are not placed immediately at the base of the germen, between it and the stamens, as Smith supposes, (Engl. Fl. v. i. p. 50.) but on the outside of the latter, hence Mr. Brown rightly looked upon them as the true perianth of the flower.

Nat. Ord. CYPERACEÆ. *Juss.*—Name from ϱυγχος, a beak, and σποϱα, a seed. (Very different in habit from *Eleocharis*, but too near in generic character.)

H. 1. R. *álba*, Vahl. (*white Beak-rush*); spikelets in a compact corymb as long as the outer bracteas, leaves narrow linear. *Engl. Bot. t.* 985. *Hook. Scot. i. p.* 16. (*Schœnus alb. Lin.*) *Engl. Fl. v. i. p.* 52.

Wet pastures and turfy Bogs. *Fl.* June—Aug. ♃.—*Spikelets* of flowers white or whitish, collected so as to form a level surface at the top. In the flowers I find 6 or more bristles much longer than the germen, and decidedly placed outside the stamens. Fruit in this and *R. fusca*, obovate, compressed, distinctly margined, tapering at the base into a short stalk. *Style* persistent, thin, pellucid, often greenish, dilated at the base, which is not articulated, nor as broad as the seed, but immediately distinguishable from the shining nut by its colour and texture. If *R. aurea*, the first species described by Vahl, is to be considered the type of the genus, then must our two British species be separated from it, if the fruit and the *style* are to afford characters: for in *R. aurea* the nut is obovate, indeed, but not at all compressed nor margined: the style is very large, thick, corky, swollen at the base, and remarkably constricted where it is set upon the germen; it is moreover grooved on two sides. I find but one flower in the spikelets of *R. aurea*, two in those of *R. alba*.

2. R. *fúsca*, Sm. (*brown Beak-rush*); spikelets in an oval head, much shorter than the outer bracteas, leaves almost filiform. *Engl. Bot. t.* 1575. (*Schœnus fusc. L.*) *Engl. Fl. v. i. p.* 52.

Bogs principally in the south-west of England and Ireland.—*Fl.* July, Aug. ♃.—Habit of the last, though very different in its specific character. Heads of *flowers* oval, rich brown; *spikelets* larger and the stigmas more protruded. Smith and Sturm have figured and described only 3 bristles to each flower. I find 6 in the British as well as in American specimens, which are different in no respect from ours.

9. SCÍRPUS. *Linn.* Club-rush.

Glumes of one valve, imbricated on all sides, equal, 1 or 2 of the outer ones sometimes sterile. *Bristles* sometimes wanting. *Style* continuous, deciduous, leaving only a small mucro.—*Nat. Ord.* CYPERACEÆ. *Juss.*—Name, according to Théis from *Cirs*, in Celtic, which makes *Cors* in the plural, whence *chorda* in Latin, and *cord* in English; the stems having been formerly employed for the same purposes as those of *Schœnus.*

H! 1. S. *lacústris*, Linn. (*Lake Club-rush or Bull-rush*); spikelets in compound lateral umbels mostly shorter than the rounded almost leafless stem. *Engl. Bot. t.* 666. *Hook. Scot. i. p.* 18. *Engl. Fl. v. i. p.* 56.

β. *glaucus*; smaller and glaucous. *Hook. Scot. v. i. p.* 18. Scirpus glaucus. *Engl. Bot. t.* 2312. *Engl. Fl. v. i. p.* 57.

Plentiful on the margins of lakes and ponds. β. In similar situations. *Fl.* July, August, ♃.—*Root* much creeping. Inflorescence truly lateral, near the extremity of the stalks, which are very variable in size, 2—6 or 8 feet high, and as thick as a finger at the base. *Spikelets* often almost sessile. *Glumes* brown fringed. *Stigmas* 2—3. *Fruit* obovato-triquetrous, accompanied by 5 or 6 *bristles.* The *stems* are much used for mats, chair-bottoms, &c. and they constitute a very considerable article of trade. Coopers use them for filling up the spaces between the seams of casks, and their spongy nature admirably adapts them to this purpose.

I am happy to be confirmed in my opinion expressed in Flora Scotica that the *S. glaucus* is but a variety of this, by so acute an observer as Mr. Wilson.

H. 2. S. *holoschœnus*, Linn. (*round-cluster-headed Club-rush*); stem rounded, spikelets lateral collected into compact globular sessile or stalked heads, leaves subulate channelled, bristles to the flower none. *Engl. Bot. t.* 1612. *Engl. Fl. v. i. p.* 57.

Sandy sea-shores, only in the extreme southern and western parts of England. *Fl.* Sept. ♃.

H. 3. S. *setáceus*, Linn. (*bristle-stalked Club-rush*); stem compressed with 1 or 2 leaves at the base, spikelets about two terminal, general bractea erect leafy much shorter than the stem, nut ribbed, bristles none. *Engl. Bot. t.* 1693. *Hook. Scot. i. p.* 19. *Engl. Fl. v. i. p.* 58.—*Isolepis setacea. Br.*

Moist gravelly places, frequent. *Fl.* July, Aug. ♃.—*Stems* tufted 2—5 inches high, very slender. *Stam.* 2. *Stigmas* 3.

* 4. S. *tríqueter*, Linn. (*triangular Club-rush*); stem triquetrous straight at the point, its sheaths leafy, spikelets ovate or oblongo-ovate clustered sessile and stalked naked, stigmas two, fruit smooth. *Engl. Bot. t.* 1694. *Engl. Fl. v. i. p.* 6.

Muddy banks of rivers, near London; and a var. with all sessile spikelets was found in Jersey by *Sherard. Fl.* Aug. ♃.—Well distinguished by its acutely triquetrous stem.

5. S. *carinátus*, Sm. (*blunt edged Club-rush*); stem rounded at the base bluntly triangular upwards, its sheaths leafless, cyme terminal decompound, involucre of two unequal leaves, spikelets oblong, stigmas 2. *Engl. Bot. t.* 1983. *Engl. Fl. v. i. p.* 66.

Banks of rivers, very rare. About London and on the banks of the Arun, Sussex. *Fl.* July, Aug. ♃.

H. 6. S. *marítimus*, Linn. (*salt-marsh Club-rush*); stem leafy triangular, spikelets terminal clustered stalked and sessile, involucre of many foliaceous leaflets, glumes with a mucro between the acute segments of the notch. *Engl. Bot. t.* 542. *Hook. Scot. i. p.* 19. *Engl. Fl. v. i. p.* 61.

Salt marshes, frequent. *Fl.* July, Aug. ♃.—*Root* creeping, sometimes swelling into knots or tubers. *Leaves* frequently exceeding the stem, flat, acuminate. *Stigmas* 3. *Bristles* 3—4, accompanying the smooth, obovato-triangular fruit.

H. 7. S. *sylváticus*, Linn. (*wood Club-rush*); stem triangular leafy,

H. * Scirpus Savii. Savi's Clubrush. Appen cyme terminal many times compounded, involucre of many foliaceous leaflets, glume entire acute. *Engl. Bot. t.* 919. *Hook. Scot. i. p.* 19. *Engl. Fl. v. i. p.* 62.

Moist woods and banks of rivers. Abundant about Killin, at the head of Loch Tay, Perthshire, and in very many places in the south of Scotland. It seems to be less frequent in England. *Fl.* July. ♃.—A handsome species, bearing innumerable small greenish ovate spikelets. *Stem* 2—3 feet high. *Leaves* broadly linear. *Fruit* with rather long bristles.

10. Blýsmus. *Panz.* Blysmus.

Spikelets bracteated, arranged on a zigzag rachis into a distichous compressed *spike*. *Glumes* of one valve, imbricated on all sides, the outermost gradually the largest, empty. *Bristles* several or none. *Fruit* compressed, oval, gradually tapering into the persistent *style*.—*Nat. Ord.* Cyperaceæ. *Juss.*—Name from βλυσμος, source or spring, near which the species usually grow.

H. 1. B. *compréssus*, Panz. (*broad-leaved Blysmus*); lowermost bractea subulate somewhat leafy, bristles 6 as long as the style, leaves linear flat. *Lindl. Syn. p.* 280. *Schœnus compressus. Linn.*—*Engl. Bot. t.* 791. *Hook. Scot. i. p.* 16. *Scirpus caricis. Retz. Scirpus caricinus. Schrad. Scirpus compressus. Pers. Scirpus caricinus. Engl. Fl. v. i. p.* 58. *Carex uliginosa. Linn.*

Boggy pastures, by river sides and near the sea: not uncommon. *Fl.* July. ♃.—*Stem* 6—8 inches high, leafy. *Glumes* brown, striated. *Bristles* with reflexed spines.—The habit of this and the following plant is quite peculiar, and justifies their being formed into a distinct genus. The fructification is exactly similar in the two. Mr. Lindley characterizes the style as deciduous: but it is by no means so in my specimens. M. de Beauvois' Genus *Nomochloa* is the same as this.

2. B. *rúfus*, Link, (*narrow-leaved Blysmus*); bracteas all equal membranaceous, bristles none, leaves very narrow grooved. *Schœnus rufus. Engl. Bot. t.* 1010. *Hook. Scot. i. p.* 17. *Scirpus rufus. Schrad.*—*Engl. Fl. v. i. p.* 59.

Marshy plains; especially near the sea, particularly in Scotland; as far as Shetland. On the coast of Wales, west of England and west of Ireland. *Fl.* July. ♃—Slenderer and more rigid than the last, more upright: spikes darker, the glumes more membranaceous and thin, not striated and more obtuse: in both very broad and convolute.

11. Eleócharis. *Br.* Spike-rush.

Glumes of one valve, imbricated on all sides, uniform, scarcely any empty. *Bristles* (4—12) toothed, rarely none. *Style* 2—3-fid, its dilated base jointed upon the germen. *Nut* mostly lenticular, crowned with the broad base of the indurated style.—*Marsh* plants. Stems *simple, leafless, sheathed at the base.* Spike *solitary, terminal, erect, not leafy. Br.*—*Nat. Ord.* Cyperaceæ. *Juss.*—Name from ἕλος, ἕλεος, *a marsh*, and χαιρω, *to delight*, from its place of growth.—This genus, if it ought to be kept distinct from *Scirpus*, is better distinguished by the solitary spike than by any character taken from the jointed or dilated base of the style. It is again divided by some Botanists, and the genera *Isolepis* Br. and *Eleogiton* Link, constituted.

H. 1. E. *palústris*, Br. (*creeping Spike-rush*); stem rounded, root much creeping, stigmas two, fruit lenticular plano-convex shorter than the 4 bristles, outer glume smaller than the rest. *Engl. Bot. t.* 131. and *Hook. Scot. i. p.* 18. (*Scirpus pal. L.*) *Engl. Fl. v. i. p.* 63.

Sides of ditches and wet marshy places, frequent. *Fl.* June, July. ♃.—"*Root* creeping (to a great length), black and shining, as well as the external sheaths of the stem. *Bristles*, in the flower, only 4, longer than the ripe fruit, flattened, dilated at the base, and broader than the filaments. *Receptacle* elongated below the insertion of the filaments, so that the flower appears to be not quite sessile, as it is in *E. multicaulis*. *Germen* shorter and broader than in the next species, the *style* is also shorter. Again the section of the stem is different from that of *E. multic*, without any central pith, but with longer membranous tubes surrounded by smaller ones." *Wilson MSS.*

2. E. *multicáulis*, Sm. (*many-stalked Spike-rush*); stem rounded, root scarcely creeping, stigmas 3, fruit obovate triquetrous longer than the 6 bristles, outer glumes smaller than the rest. *Engl. Bot. t.* 1187. (*Scirpus multic.*)—*Scirpus palustris* β. *Linn. Lapp. ed.* 2. *Hook. Scot. v. i. p.* 18.

Not uncommon probably in marshy places throughout the kingdom; but frequently passed by for the *E. palustris.*—*Fl.* July. ♃.—"*Root* not creeping.[1] *Sheaths* of the stem brown, not shining; the stems are always inclined, frequently bent and almost prostrate. *Bristles* 6, shorter and narrower than in the former species, the base not dilated, shorter than the ripe fruit. The *receptacle* is elongated above the insertion of the filaments; hence the *germen* seems to be attenuated below. *Stem* with a stout central pith, with membranous tubes of looser texture interposed between it and the external part. Some of the *bristles* in the flower seem to be attached to the receptacle higher up than the base of the filaments, but still three of these bristles are at the exterior base of those filaments." *Wilson MSS.*

H. 3. E. *pauciflóra*, "Link," (*chocolate-headed Spike-rush*); stem rounded its sheaths leafless, spike ovate naked, the two outer glumes the largest obtuse but shorter than the spike, stigmas 3, style scarcely deciduous not jointed. *Scirpus pauciflorus. Engl. Bot. t.* 1029. *Hook. Scot. i. p.* 17. *Engl. Fl. v. i. p.* 55. *S. Bæothryon. Ehrh.*

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[1] Not, indeed, as in *E. palustris*, but it certainly sends out root-stocks to the length of 2 or 3 inches, from which fibres proceed below and new shoots above. The *roots* cannot be called simply tufted. I dwell much on the character of this and the preceding species because I have myself fallen into an error in the Fl. Scot. in considering them varieties of each other. Sir James Smith has well distinguished them in the *Engl. Flora*, and my friend Mr. Wilson, with his usual sagacity has confirmed Smith's character and detected others, which I give in his own words.

Moors in Scotland not unfrequent. In England rare; near Yarmouth, Norfolk; Anglesea, and Bangor in Wales; *Mr. Wilson. Fl.* July, Aug. ♃.—Habit of small plants of *E. palustris. Fruit* pale, obovate, triquetrous, terminated by the withered rigid style, not swollen at the base nor jointed, gradually tapering from the obtuse point of the fruit. *Roots* fibrous, sending out jointed runners.

H 4. E. *cæspitósa*, Link, (*scaly-stalked Spike-rush*) ; stem rounded, or slightly compressed (*Wilson*), sheaths with subulate leaves, their 2 outermost glumes (fertile) longer than the very small spikes and terminating in long rigid points, stigmas 3, style deciduous, fruit mucronated with the narrow persistent base of the style. *Scirpus cæspitosus. Engl. Bot. t.* 1029. *Hook. Scot. i. p.* 17. *Engl. Fl. v. i. p.* 55.

Moors and moist heathy places every where. *Fl.* June, July. ♃.—A small species, 2—6 inches high. *Bristles* 6. *Fruit* obovate triquetrous, pale yellow, tipped with a mucro, as in most of the true *Scirpi.*—This plant is called "*Deer's Hair*" in the Highlands, and yields an abundant food to sheep on the mountains in the spring. Upon Ben Lawers I have found a variety, having the larger of the two outer glumes an inch long, 4 times the length of the spike.

5. E. *aciculáris*, Roem. and Sch. (*least Spike-rush*) ; stem setaceous compressed grooved, sheaths leafless, spike ovate acute, glumes equal acute, stigmas 3, bristles none. *Engl. Bot. t.* 749. and *Hock. Scot. i. p.* 18. (*Scirpus acic.*) *Engl. Fl. v. i. p.* 64.—*Isolepis. Schlecht.*

Sides of lakes, and wet, sandy and marshy places, frequent. *Fl.* July, Aug. ♃.—The most slender and delicate of the Spike-rushes. *Root* fibrous with filiform runners. *Fruit* obovate oblong, pale yellow, beautifully impressed with dotted lines, tipped with the almost globose dark base of the style.

H. 6. E. *flúitans*, (*floating Spike-rush*) ; stem (or rather floating root) compressed branched, spikes ovate, glumes nearly equal obtuse, stigmas 2, bristles none, fruit obovate plano-convex, tipped with the narrow base of the style. *Scirpus fluit. L.—Engl. Bot. t.* 216. *Hook. Scot. i. p.* 18. *Engl. Fl. v. i. p.* 56.—*Isolepis, Br. Eleogiton, Link, Lindl.*

Ditches and still lakes, and pools of water which are sometimes dried up. *Fl.* June, July. ♃.

12. ERIÓPHORUM. *Linn.* Cotton-grass.

Glumes of one valve, imbricated on all sides, nearly equal. *Fruit* accompanied by very long silky hairs.—*Nat. Ord.* CYPERACEÆ. *Juss.*—Name from ἔριον, *wool*, and φερω, *to bear.*

* *Spike solitary.*

1. E. *alpínum*, Linn. (*alpine Cotton-grass*) ; stem triangular, leaves much shorter than the sheaths, spikes oblongo-ovate. *Engl. Bot. t.* 311. *Hook. Scot. i. p.* 20. *Engl. Fl. v. i. p.* 67.

Northern bogs, now probably extinct. It is to be feared that there is some mistake in regard to its having been found in the Breadalbane Mountains. It was discovered in the Moss of Restenat near Forfar, by Mr. Brown and Mr. G. Don: but that bog is drained and the plant has disappeared. *Fl.* June. ♃.

H. 2. E. *vaginátum*, Linn. (*Hare's-tail Cotton-grass*); stem above triangular, sheaths below with long setaceous leaves, above leafless obtuse inflated, spike ovate. *Engl. Bot. t.* 873. *Hook. Scot. i. p.* 20. *Engl. Fl. v. i. p.* 66.

Turf-bogs and barren moors, not unfrequent, especially in the mountainous parts of the north. *Fl.* March—May. ♃.

3. E. *capitátum*, Host, (*round-headed Cotton-grass*); stem rounded, sheaths below bearing linear subulate leaves, above leafless inflated obtuse, spike almost globose. *Engl. Bot. t.* 2387. *Hook. Scot. i. p.* 20. *Engl. Fl. v. i. p.* 66.

Ben Lawers, by the side of a rivulet near perpetual snow. *G. Don. Fl.* July, Aug. ♃.

** *Spikes many.*

H. 4. E. *polystáchion*, Linn. (*broad-leaved Cotton-grass*); "stem round, leaves flat with a triangular point, stalks of the spikes smooth, hairs thrice the length of the spikes." *Engl. Bot. t.* 563. *Hook. Scot. i. p.* 21. *Engl. Fl. v. i. p.* 67.

Bogs. *Fl.* April—June. ♃.

H. 5. E. *púbescens*, Sm. (*downy-stalked Cotton-grass*); "stem angular upwards, leaves flat lanceolate with a triangular point, stalks of the spikes downy, hairs twice the length of the spike." *Engl. Fl. i. p.* 68. *E. angustif. Poit. E. latifolium*, *Schrad. Germ. v. i. p.* 154. (excluding the sign).

Bogs and marshes, Scotland and Cambridgeshire. (*Sm.*) Anglesea. *Mr. Wilson. Fl.* April—June. ♃.

H 6. E. *angústifolium*, Roth, (*common Cotton-grass*); stem nearly round, leaves linear triangular, channelled towards the base, stalks of the spikes smooth, hairs 4 times the length of the spike." *Engl. Bot. t.* 564. *Hook. Scot. i. p.* 21. *Engl. Fl. v. i. p.* 69.

Turf-bogs, and muddy meadows, common. *Fl.* April. ♃.

7. E. *grácile*, Roth, (*slender Mountain Cotton-grass*); "stem round with three slight angles, leaves triangular channelled towards the base, spikes longer than the bractea, hairs twice the length of the spike." *Engl. Bot. t.* 2402. *Hook. Scot. i. p.* 20. *Engl. Fl. v. i. p.* 69.

On Ben Lawers and the Clova mountains, in a micaceous soil. *G. Don.* Crom Idwell. North Wales. *Mr. Wilson. Fl.* July. ♃.

When this division of the many spiked Cotton-grasses consisted only of 2 species, *E. polystachion* and *E. angustifolium*, I had great difficulty in finding satisfactory characters by which they might be separated. Now I am quite at a loss how to distinguish the various individuals. With regard to the rough stalked species (*E. pubescens*) it is certainly very common both in America and in this country, and I had always taken it for *E. polystachion.* It is assuredly the *E. latifolium* of Schrader, for he makes its character to depend on the *scabrous* (not really pubescent) peduncles. Mr. Wilson has examined *E. polyst. E. angust.* and *E. gracile* in a living state, having seen them all growing together in Wales, and has sought carefully, but in vain, for characters.

13. NÁRDUS. *Linn.* Mat-grass.

Cal. 0. *Cor.* of 2 valves. *Nat. Gramineæ. Juss.* Name from *ναρδος*, formerly applied to an odoriferous substance, but which is not applicable in this case.

1. N. *stricta*, Linn. (*Mat-grass*); spike erect slender, the florets all pointing one way. *Engl. Bot. t.* 290. *Hook. Scot. i. p.* 21. *Engl. Fl. v. i. p.* 70.

Moors and heaths, most abundant. *Fl.* June. ♃.—A grass of simple structure, growing in short tufts, so coarse and rigid that cattle will not eat them. *Culms* and leaves setaceous. *Spike* long, erect, grooved and toothed at short distances for the insertion of the florets. Valves of the *Cor.* lanceolate, outer one coriaceous, purplish green, tapering gradually into an awn: inner ones smaller, awnless, membranous. *Stam.* 3. *Style* and *stigma* single.

ORD. II. DIGYNIA. 2 *Styles.*

All in this Order, together with the preceding genus *Nardus*, and *Anthoxanthum* in the 2d Class, constitute the true GRASSES.[1] As they are a numerous tribe, the following Synoptical Table may assist the student in ascertaining the genera.

** Inflorescence panicled.*

† Calyx single flowered.

14. Alopecúrus. 15. Phálaris. 16. Ammóphila. 17. Phléum. 18. Lagúrus. 19. Mílium. 20. Gastrídium. 21. Stípa. 22. Polypógon. 23. Calamagróstis. 24. Agróstis.

†† Calyx 2, or rarely 3-flowered.

25. Catabrósa. 26. Aira. 27. Mélica. 28. Hólcus. 29. Arrhenathérum. 30. Hieróchloe. 31. Sesléria. 32. Pánicum. 33. Setária.

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[1] Here again we have a structure in the flower, and a habit in the whole plant, so different from those of other flowering plants, that in the former especially, peculiar names have been given to its different parts, which it may be desirable to explain. The floral coverings, as they are termed, are *glumaceous* or chaffy. The *outer* of these which are empty, composed of one, two, or three pieces, are here called the *calyx*, and the pieces the *glumes* or *valves*, and they *seem* to hold the place of such in the two-valved, single flowered genera; but often they include many flowers, and with justice are considered *bracteas.* These Messrs. Brown and Lindley call *glumes*. The inner, generally of a thinner texture, is here, as by Linnæus and Smith, named *corolla*, its pieces *glumes* or *valves*. This is the true perianth and so called by Brown, (Paleæ Beauv. and Lindl.) Within this and at the base of the germen are generally 2 collateral, rarely 1, small *scales* (nectary of Linn. and Sm.). The stem is mostly hollow, jointed and called a *culm*. It bears at each joint a leaf, which is sheathing at the base and split up on one side, and at the top of the sheath, just where it expands into the blade, is frequently a small projecting membrane, called a ligule.

††† *Cal. 3, or more frequently many flowered.*

34. Póa. 35. Triódia. 36. Bríza. 37. Dáctylis. 38. Cynosúrus. 39. Festúca. 40. Brómus. 41. Avéna. 42. Arúndo.

** *Inflorescence spiked. (Solitary flowers or spikelets sessile upon a common stalk or rachis.)*

† *Flowers or spikelets distichous or inserted on all sides.*

43. Elymus. 44. Hórdeum. 45. Tríticum. 46. Brachypódium. 47. Lólium. 48. Rottbóllia. 49. Knáppia. 50. Spartína.

†† *Flowers or spikelets unilateral.*

51. Cýnodon 52. Digitária.

* *Flowers panicled.* (Panicles often very compact, so as to appear spiked.) 14—42. 1 *Calyx single flowered.* Gen. 14—24.

14. ALOPECÚRUS. *Linn.*

Cal. 2-valved; *valves* nearly equal, mostly connate at the base. *Valve* of the *cor.* with an awn rising from the base.—Name from αλωπεξ, a *fox*, and ουρα, a *tail.*

H. 1. A. *praténsis*, Linn. (*Meadow Fox-tail Grass*); culm erect smooth, panicle spiked cylindrical obtuse, calyx-glumes lanceolate acute hairy connate at the base, awn twice the length of the corolla. *Engl. Bot. t.* 759. *Hook. Scot. i. p.* 21. *Engl. Fl. v. i. p.* 78.

Meadows and pastures, common. *Fl.* May, June. ♃.—1½ to 2 feet high: an excellent grass for cattle. Panicle of a yellow green colour with silvery hairs. *Cal. and Cor.* much ciliated; in this, as in all the species, remarkably compressed.

2. A. *alpínus*, Sm. (*alpine Fox-tail Grass*); culm ascending smooth, panicle spiked ovate, cal. glumes ovate abruptly acute hairy united at the base, awn scarcely longer than the corolla, "upper sheath inflated thrice as long as its lanceolate leaf." *Engl. Bot. t.* 1126. *Hook. Scot. i. p.* 22. *Engl. Fl. v. i. p.* 80.

Discovered by Mr. R. Brown on Loch na Gaar, in Aberdeenshire. It was pointed out to me by Mr. Thomas Drummond on wet rocks by a waterfall at Loch Brandy, on the hills above Clova, Forfarshire.—*Fl.* July, Aug. ♃.—This plant which, even at first sight, is readily distinguished by its ovate panicle and short broad upper leaf, with its inflated sheath (as first observed by Mr. Brown in the Appendix to Parry's 1st Voyage), seems to be quite unknown to Botanists abroad, and is very rare indeed in this country. It is, however, plentiful in North America and Spitzbergen.

H. 3. A. *agréstis*, Linn. (*slender Fox-tail Grass*); culm erect scabrous above, panicle spiked cylindrical acuminate, calyx-glumes acute almost glabrous united as far as the middle. *Engl. Bot. t.* 848. *Hook. Scot. i. p.* 22.

Fields and way-sides. June, July. ⊙.—Readily known by its attenuated panicles or spikes, frequently of a purplish colour, by the lanceolate, acute *cal. glumes*, which are glabrous or a little rough at the keel. *Corolla* quite smooth, with the awn 3 or 4 times its length.

H. 4. A. *bulbósus*, Linn. (*tuberous Fox-tail Grass*); culm erect, panicle spiked cylindrical acuminate, calyx-glumes acute slightly hairy free, root tuberous. *Engl. Bot. t.* 1249. *Engl. Fl. v. i. p.* 81.

Wet salt marshes in England, but rare: near Yarmouth and Weymouth. In Cardiff marshes, Wales. *Fl.* July. ♃.—The *inflorescence*, though very dense, is not a true spike. The pedicels mostly bear single flowers, but often another very small abortive one. *Calyx-glumes* entirely distinct to the base.

H. 5. A. *geniculátus*, Linn. (*floating Fox-tail Grass*); culm ascending bent at the joints, panicle spiked cylindrical obtuse, calyx-glumes united at the base obtuse slightly hairy and fringed, awn twice as long as the corolla. *Engl. Bot. t.* 1250. *Hook. Scot. i. p.* 22. (*including the syn. of A. fulvus*). *Engl. Fl. v. i. p.* 82.

In pools and wet and marshy places, sometimes on dry ground. *Fl.* July, Aug. ♃.

6. A. *fúlvus*, Sm. (*orange-spike Fox-tail Grass*); culm ascending bent at the joints, panicle spiked cylindrical obtuse, calyx-glumes united at the base obtuse slightly hairy and fringed, awn the length of the calyx. *Engl. Bot. t.* 1467. *Hook. Scot. i. p.* 22. (*under A. geniculatus*). *A. geniculatus. Host, Gram. Austr. v. ii. t.* 32.

Ponds and ditches; near Birmingham; Norwich; and in Angus and Fifeshire, Scotland. *Fl.* July. ♃.—I had certainly considered this plant, in *Fl. Scotica*, to be not distinct from *A. geniculatus*. If there be any decisive mark of distinction, it must exist in the comparative length of the awn, should that prove constant.

15. PHÁLARIS. *Linn.* Canary-grass.

Cal. of two, erect, carinated *valves*, larger than the two-valved, at length indurated *corolla*, which is accompanied at the base by one or two valves of other imperfect florets. *Fruit* invested with the hardened corolla.—Name from φαλος, *shining*:—canary-seed being very glossy.

1. P. *canariénsis*, Linn. (*cultivated Canary-grass*); panicle spiked ovate, cal. glumes boat-shaped entire at the point accompanied by the single valves of 2 other florets. *Engl. Bot. t.* 1310. *Hook. Scot. i. p.* 23. *Engl. Fl. v. i. p.* 74.

Naturalized in many parts of England and Scotland. *Fl.* July. ☉.—1—2 feet high, glaucous. *Leaves* broad. *Spikes* handsome, composed of large, pale yellow-green *calyx-glumes*, marked with deeper lines and singularly keeled at the back. *Canary-seed*, as we see it, is not only the seed of this plant, but it is invested closely (as small *grass-seeds*) with the pericarp, and that again with the hardened corolla, which occasions its glossy appearance and pointed form.

H. 2. P. *arundinácea*, Linn. (*Reed Canary-grass*); panicle erect, its branches patent, florets clustered secund, imperfect floret consisting of a small hairy valve. *Engl. Bot. t.* 402. *and t.* 2160. *f.* 2. *Arundo colorata. Fl. Br.*—*Digraphis arund. Trin. and Lindl.*

Sides of lakes and rivers, common. *Fl.* July, Aug. ♃.—Frequent in gardens with variegated leaves, and called *ribband grass.* Very different from the last in general habit, but not in essential character. *Panicle* large, 6—8 inches long, often brownish or purplish green. Excellent for securing river banks; its roots are creeping and here and there tufted.

16. Ammóphila. *Host,* Sea-reed.

Panicle spiked. *Cal.* of 2 nearly equal, keeled valves, longer than the corolla, surrounded at the base by a tuft of hairs.—Name from *αμμος, sand,* and *φιλος,* a lover.

H 1. A. *arundinácea,* Host, (*common Sea-reed, Marum, or Mat-weed*); panicle cylindrical acuminate, glumes acute, hairs one-third of the length of the corolla.—Ammophila arenaria. *Lindl. Syn. p.* 303. *Arundo arenaria, Engl. Bot. t.* 520. *Hook. Scot. i. p.* 27. *Engl. Fl. v. i. p.* 171.—*Psamma, Beauv.*

Sandy sea-shores, frequent. *Fl.* July. ♃.—*Root* much creeping. *Leaves* long, narrow, rigid, involute, glaucous. *Culm* 2—3 feet high. *Cor.* far more rigid than the calyx, the larger valves with a small sinus below the point.—Extensively employed in Norfolk and in Holland for preserving the banks of sand, which protect those countries from the inroads of the sea. It is called *Muran* in Gaelic (*Lightf.*) *Marram* in Norfolk.—A second species, *A. baltica,* is found on the shores of the Baltic.

17. Phléum. *Linn.* Cat's-tail-grass.

Panicle compact. *Cal.* of 2 valves, nearly equal, acuminate, or mucronato-aristate, including the *cor.* of 2 awnless valves. *Seed* free.—Name from φλεος, or φλεως, formerly given, as is supposed, to the *Reed-mace, Typha,* to which our grass has some distant resemblance.

H 1. P. *praténse,* Linn. (*common Cat's-tail-grass, Timothy grass*); panicle spiked cylindrical, cal. glumes truncate mucronate aristate ciliated at the back longer than the awn. *Engl. Bot. t.* 1076. *Hook. Scot. i. p.* 23. *Engl. Fl. v. i. p.* 75.

Meadows and pastures, very common. *Fl.* June. ♃.—*Root* sometimes tuberous, and then the plant is the *Phl. nodosum, Willd.*—*Cal. glumes,* as in all the species, extremely compressed, keeled, with a dorsal, green nerve, running out into a spreading awn, scarcely half so long as the valve. This grass is the Highland badge of the clan Sutherland.

2. P. *alpínum,* Linn. (*alpine Cat's-tail-grass*); panicle spiked ovato-oblong, cal-glumes truncated mucronato-aristate ciliated at the back equal in length to the awn. *Engl. Bot. t.* 519. *Hook. Scot. i. p.* 23. *Engl. Fl. v. i. p.* 76.

Rare; on the Breadalbane mountains and on Garway Moor. *Fl.* July. ♃.—*Spike* short, purplish.

3. P. *ásperum,* Jacq. (*rough Cat's-tail-grass*); panicle spiked cylindrical, cal. glumes wedge-shaped mucronate rough, stem often branched. *Engl. Bot. t.* 1077. (*P. paniculatum*). *Engl. Fl. v. i. p.* 76.

Rare in dry open fields, in the western and midland parts of England. *Fl.* July. ⊙.—*Culms* very leafy, and the long spikes are partly concealed among them. *Cal. glumes* tumid upward.

H. 4. P. *Boehméri*, Schrad. (*purple-stalked Cat's-tail-grass*); panicle spiked cylindrical, cal. glumes linear-lanceolate acuminato-aristate downy at the keel. *Engl. Bot. t.* 459. (*Phalaris phleoides, L.*) *Engl. Fl. v. i. p.* 77.

Dry sandy and chalky fields, rare, principally in Norfolk and Cambridgeshire. *Fl.* July. ♃.—*Culms* simple, erect, sparingly leafy, slender, shining purple.

5. P. *Michélii*, All. (*Michelian Cat's-tail-grass*); panicle spiked cylindrical, cal.-glumes lanceolate acuminate strongly ciliated at the back. *Engl. Bot. t.* 2265. *Hook. Scot. i. p.* 24. *Engl. Fl. v. i. p.* 78. *Phalaris alpina, Hænke.*

Rocky parts of the high mountains of Clova, Scotland. *Fl.* July, Aug. ♃.—Distinguishable at once from the preceding species by its gradually tapering glumes.

6. P. *arenárium*, Linn. (*Sea Cat's-tail-grass*); panicle spiked oblongo-obovate, cal. glumes lanceolate acute ciliated at the back. *Engl. Bot. t.* 222. (*Phalaris aren.*) *Hook. Scot. i. p.* 24. *Engl. Fl. v. i. p.* 78.—"*Achnodon and Chilochloa, Link.*"

On loose sand, especially near the sea. *Fl.* May, June. ⊙.—*Culms* 5—6 inches high, many from the same root. *Cor.* twice as short as the *cal.*, membranous, truncated.

18. LAGÚRUS. *Linn.* Hare's-tail-grass.

Panicle spiked. *Cal. glumes* of 2, fringed *valves*, lengthened into feathery awns. Outer valves of the *cor.* bifid at the apex, with a dorsal awn.—Name from λαγωος, *a hare*, and ουρα, *a tail.*

1. L. *ovátus*, Linn. (*ovate Hare's-tail-grass*).—*Engl. Bot. t.* 1334. *Engl. Fl. v. i. p.* 167.

Very rare. Sandy fields by the sea in Guernsey. *Fl.* June. ⊙.—The only known species of the genus, remarkable for its soft hairy and pale heads of flowers, from among which the long awns are protruded.

19. MÍLIUM. *Linn.* Millet-grass.

Panicle spreading. *Cal.* 2-valved, flattish, herbaceous, rather acute, longer than the corolla. *Fruit* invested with the permanent hardened *corolla.*—Name from *mille*, a thousand, on account of its fertility; or, according to Théis, from the Celtic *mil*, a stone, from the hardness of its fruit.

H. 1. M. *effúsum*, Linn. (*spreading Millet-grass*); panicle glabrous, its branches subverticillate, leaves lanceolate, ligule obtuse *Engl. Bot. t.* 1006. *Hook. Scot. i. p.* 24. *Engl. Fl. v. i. p.* 87.

Moist shady woods. *Fl.* June. ♃.—*Culms* 3—4 feet high.

20. GASTRÍDIUM. *Beauv.* Nit-grass.

Panicle contracted, spiked. *Cal.* 2-valved, acute, ventricose at the base, membranaceous, much longer than the *cor.* *Cor.* of 2 valves, outer one mostly with a dorsal awn investing the fruit.—Name from γαστριδιον, a ventricle, or little swelling, as is seen at the base of the calyx.

H. 1. G. *lendígerum*, Beauv. (*awned Nit-grass*); cal. valves lanceolate acuminate, awn twice their length.—*Milium lendigenus, Engl. Bot. t.* 1107. *Engl. Fl. v. i. p.* 87.

Places where water has stagnated, near the sea, rare. In Shippey, at Weymouth, and at Gillingham in Norfolk. *Fl.* Aug. ♃.—4 to 6 or 8 inches high, with numerous glossy florets, singularly swollen at the base. A very distinct genus from *Milium.*

21. STÍPA. *Linn.* Feather-grass.

Panicle erect, compact. *Cal.* of 2 valves, longer than the corolla. *Cor.* cartilaginous, involute, terminated with a very long twisted awn, jointed at the base, and finally separating at the joint.—Name from στυπη, *silky*, which the common species of the gardens well merits.

1. S. *pennáta*, Linn. (*common Feather-grass*); leaves rigid setaceous grooved, awns exceedingly long feathering to the point. *Engl. Bot. t.* 1356. *Engl. Fl. v. i. p.* 161.

Said to have been found in Dillenius' time in Westmoreland. *Fl.* June. ♃.—Surely not a native of this country, but of dry places in the south of Europe. A great ornament to our gardens in the summer, and to our rooms in the winter, for if gathered before the seed is ripe, the long feathering awns remain, and a tuft of this plant is almost as beautiful as the famed tail of the Bird of Paradise.

22. POLYPÓGON. *Desf.* Beard-grass.

Panicle compact, somewhat spiked. *Cal.* of 2 valves, equal, larger than the *cor.*, awned at the extremity. *Cor.* of 2 unequal valves, the outer obtuse, awned at the very extremity. Name from πολυ, *many*, and πωγων, a *beard*: from the bearded appearance of the panicle.

1. P. *monspeliénsis*, Desf. (*annual Beard-grass*); awns thrice as long as the rather obtuse rough valves of the calyx, root annual. *Engl. Bot. t.* 1704. (*Agrostis panicea*). *Engl. Fl. v. i. p.* 85. *Phleum crinitum, Sm. Fl. Br.*

Rare, in moist pastures near the sea. In Hampshire and Essex, near Cley, Norfolk. *Fl.* July, Aug. ⊙.—A beautiful grass, rare, but undoubtedly wild in our country, most abundant in the warmer parts of Europe.

2. P. *littorális*, Sm. (*perennial Beard-grass*); awns equal in length to the almost glabrous acute valves of the calyx, root perennial. *Engl. Bot. t.* 1251. (*Agrostis littoralis*). *Engl. Fl. v. i. p.* 86.

Muddy salt marshes, rare. Near Cley, Norfolk, in Essex, and near Woolwich. *Fl.* July. ♃.—Very different from the last species, but rightly referred, by Sir James Smith, to *Polypogon.* The calyx-valves are more acuminated than in *P. monsp.*, and they more gradually taper into the much shorter awn, outer valve of the *cor.* in both truncate and toothed at the points.—It was long supposed peculiar to England, but is now found in Germany.

23. CALAMAGRÓSTIS. *Adans.* Small-reed.

Panicle loose. *Cal.* of 2 valves, longer than the 2 valves of the corolla, which is surrounded by hairs at the base, and has the outer valve awned.—Name from καλαμος, one of the *Palms*, and αγροστις, a genus of grasses; a barbarous denomination, and only admissible on the ground of its being now generally adopted.

H. 1. C. *epigéjos*, Roth, (*Wood Small-reed*); cal. glumes subulate their keel rough, panicle erect close, flowers crowded unilateral, corolla with a dorsal awn nearly as long as the calyx. *Arundo epigejos.* Linn. *Engl. Bot. t.* 403. *Engl. Fl. v. i. p.* 169. (*incl. the Syn. of Hook. Scot. Arundo. Calamagrostis.*)

Rare, in shady moist places. About London and Norwich. Dalrymple Wood, Ayr, Scotland. *Mr. Goldie.* *Fl.* July. ♃.

2. C. *lanceoláta*, Roth, (*purple-flowered Small-reed*); cal. glumes lanceolate their keel smooth, panicle erect loose, flowers scattered spreading, corolla with a very short terminal awn between the bifid point. *Arundo Calamagrostis, Linn. Engl. Bot. t.* 2159. *Hook. Scot. i. p.* 27. (*incl. the Syn. of Lightf.*) *Engl. Fl. v. i. p.* 170.

Moist hedges and in fenny countries, not uncommon. *Fl.* June. ♃. *Panicle* much smaller and looser than the last, flowers more purple and shining.

3. C. *strícta*, Lindl. (*narrow Small-reed*); panicle erect close, cal. glumes broadly lanceolate acute, a little rough on the keel, *corolla* as long as the calyx longer than the hairs, with a dorsal awn equal to it in length. *Arundo stricta, Engl. Bot. t.* 2160. *Hook. Scot. i. p.* 27. *Engl. Fl. v. i. p.* 171.

In Scotland; very rare. Discovered by Mr. G. Don, at White Muir Marsh, near Forfar; but does not now exist there. Near Rescobie, 4 miles from Forfar. *T. Drummond.* *Fl.* June. ♃.—A very distinct species; the smallest of the genus. *Panicle* 1—4 inches long. *Cal.* brown, glabrous except at the keel. *Cor.* brownish, truncate. *Hairs* not half the length of the flower.

24. AGRÓSTIS. *Linn.* Bent-grass.

Panicle loose. *Cal.* of 2 unequal glumes, longer than the cor. *Corolla* of 2 unequal valves, the inner sometimes wanting, the outer with or without an awn. *Seed* free.—Name, given by the Greeks γ to Grasses, from αγρος, a field, because they are so abundant in open places.

1. A. *canína*, Linn. (*brown Bent-grass*); branches of the panicle long slender erecto-patent, *cal.* valves unequal lanceolate rough at

the keel, *corolla* of 1 valve with a dorsal awn from below the middle, leaves linear. *Engl. Bot. t.* 1856. *Hook. Scot. i. p.* 24. *Engl. Fl. v. i. p.* 90.—*Trichodium, Schrad. Lindl.*

Moist heaths and moory places, abundant. *Fl.* June, July. ♃.—Very variable in the size and colour of its flowers, purple or green, and in the length of the dorsal *awn*, which is sometimes included within the calyx, at other times considerably exserted. I have never seen but one valve to the corolla, not even the rudiment of a second; and it is from this circumstance that Schrader has constituted of it the genus *Trichodium.* But other species of *Agrostis* have a very reduced corolla, and *Agrostis setacea*, placed in *Trichodium* by Mr. Lindley, has assuredly an inner corolla present, and that *constantly*. Smith and Leers have seen an inner valve to be sometimes present, even in *A. canina;* hence, as the former observes, its presence or absence does not here afford a specific character.

H. 2. A. *setácea*, Curt. (*bristle-leaved Bent-grass*); branches of the panicle short close (spreading when in fl. *Mr. Tozer*), cal. valves unequal lanceolate rough at the keel, outer valve of the corolla with a long geniculated twisted awn from its base, inner very minute, leaves setaceous. *Engl. Bot. t.* 1188. *Hook. Scot. i. p.* 25. *Engl. Fl. v. i. p.* 91.—*Trichodium, Rœm. and Sch. and Lindl.*

Very local, almost wholly confined to the dry downs of the extreme south and south-west parts of England; as Hampshire and Devonshire. *Mr. Tozer* of Truro, Cornwall, finds it to be the most prevailing grass in his neighbourhood, growing among furze and heath. It is mentioned in a list of Scottish plants communicated to me by Mr. D. Don. *Fl.* June, July. ♃.—The Rev. Mr. Tozer has had the kindness to give me numerous specimens of this rare and little known grass, which was long supposed to be peculiar to England. It is now ascertained to be plentiful in Portugal, the native country of *Erica ciliaris* and *Reseda fruticulosa*, which Mr. Tozer has also had the good fortune to find, truly wild, in Cornwall: affording an additional proof, if any were needed, of the great mildness of the climate in that part of England, and of its proximity in that respect to the more southern parts of Europe. Larger valves of the *corolla* white, thin, and membranous, truncate at the top with 4 green nerves, of which two, the lateral ones project into mucros. *Awn* from the very base, rough, truly geniculated and twisted. Inner *valves* very small, truncate and toothed, accompanied on each side at the base by a pencil of white hairs. "On a sunny day the panicle is beautifully spreading, but it collapses very quickly in cloudy weather, or on being gathered."—*Tozer.*

3. A. *Spíca vénti*, Linn. (*silky Bent-grass*); panicle spreading, cal. valves unequal lanceolate rough at the keel, outer valve of the corolla bifid terminated by a long straight awn, inner one smaller with a small barren pedicel at its base. *Engl. Bot. t.* 951. *Engl. Fl. v. i. p.* 89.—*Anemagrostis, Trin. and Lindl.*

Rare in sandy fields which are occasionally flooded, principally about London: in Norfolk and Lancashire. *Fl.* June, July. ⊙.—A beautiful grass, with very slender branches to its ample panicle, which is wavy and glossy like silk, well named by old Parkinson "*Gramen agrorum venti spica.*" *Awn* many times longer than the *cor.*, rough. Inner *valve* of *cor.* not much smaller than the outer: at its base is a little pedicel, destitute of flower, which has a small tuft of hair on each side.

H. 4. A. *vulgáris*, With. (*fine Bent-grass*); branches of the panicle smoothish, its branchlets diverging, outer valve of the cor. 3-nerved, ligule extremely short and truncate. *Engl. Bot. t.* 1671. *Hook. Scot. i. p.* 25. *Engl. Fl. v. i. p.* 61.

β. *aristata*; outer valve of the cor. awned. A. *canina*, *With.*

γ. *pumila*; scarcely 3 inches high. *A. pumila*, *Lightf. Scot. p.* 1081. *fig. in title-page.*

Meadows, pastures, and banks, common everywhere. *Fl.* June, July. ♃.—*Root* creeping, throwing out many, mostly ascending *culms*, 1 or 1½ foot high. *Panicle* purplish; *rachis* smooth and the branchlets nearly so. *Cal.* glumes lanceolate, smooth, shining, rough on the back. *Cor. glume* of 2 thin, delicate, membranous, unequal valves. *Outer one* a little shorter than the *cal.*, 3-nerved, tridentate, awnless in α, bearing an awn of uncertain length, but mostly short in β, arising from the central nerve, a little below the middle of the back; *inner valve* half as small, 2-nerved, bifid.—I possess specimens of this species bearing the rudiment of a second flower upon a rather long foot-stalk, in the same calyx.

" 5. A. *álba*, Linn. (*Marsh Bent-grass*); branches of the panicle hispid, branchlets patent, outer valve of cor. 5-nerved, ligule oblong. *Engl. Bot. t.* 1189. *Hook. Scot. i. p.* 25. *Engl. Fl. v. i. p.* 93. *Schrad. Germ. p.* 209. (*descr. excellent*). *A. stolonifera*, *Linn. Engl. Bot. t.* 1532.

Pastures, road-sides, and in various other situations, abundant. *Fl.* July, August. ♃.—*Plant* stouter than the last, and generally taller. *Culms* ascending, often rooting at the base, and throwing out runners. *Panicle* rather contracted, pale green or purplish, branchlets patent. *Cal. glumes* as in *A. vulgaris*, as are those of the *cor.*, but the outer valve has 5 nerves and as many teeth, and the inner one is only faintly 2 or 3-nerved at the base, nearly entire and obtuse at the extremity. In some there is a short awn at the base of the outer valve of the *cor.*: this constitutes the *A. compressa*, *Willd.*, and sometimes the flowers are viviparous, H. which is the *A. sylvatica*, *Linn.* I believe all are now agreed that the *Agr. stolonifera* of Authors is the same as *alba*. The famous Fiorin grass of Dr. Richardson and the Irish agriculturists is what I have called *A. alba*, as I ascertained by the aid of specimens, gathered in the company of Dr. Richardson himself. I know not of any British awnless Agrostides, which may not be reduced either to *A. vulgaris* or *A. alba*. The two species are indeed very closely united.

†† *Calyx 2 or rarely 3-flowered.* Gen. 25—33.

25. CATABRÓSA. *Beauv.* Whorl-grass.

Panicle spreading. *Cal.* of 2 valves, membranaceous, very obtuse, much shorter than the spikelets, 2 or 3-flowered, often with a 4th imperfect one. *Cor.* 2-valved, coriaceous, membranous only at the extremity, ribbed, truncated, awnless, erose, nearly equal. Name from καταβρωσις, *a gnawing*; from the erose extremity of the glumes.

H. 1. C. *aquática*, Beauv. (*water Whorl-grass*); panicle with whorled patent branches, leaves broadly linear obtuse. *Aira aquatica, Linn.—Engl. Bot. t.* 1557. *Hook. Scot. i. p.* 29. *Engl. Fl. v. i. p.* 101.

Banks of rivers, and floating in pools of water. *Fl.* May, June. ♃.—This is very different in habit and generic character from *Aira*, and from any other grass I am acquainted with. Mertens unites it with the long spikeleted *Poas*, which now, with Smith, form the genus *Glyceria*, but it does not naturally combine with them. *Culms* or rather caudex of the root very long, branched, floating, jointed, sending from the joints fibrous radicles below and culms above, a foot or more long, stout, with short broad leaves. *Cal.* scarcely nerved, thin and membranous, broadly oval, obtuse. *Cor.* of a thick texture, brownish green, white and diaphanous at the blunted extremity. Mr. Wilson finds, in the wet sand of the north shore of the river at Liverpool, a var. not two inches high, each calyx containing in general but one perfect flower.

26. Aíra. *Linn.* Hair-grass.

Cal. of 2 valves, unequal, containing two perfect flowers. *Cor.* two valved, membranaceous and thin, the outer one awned (rarely awnless) near the base. *Fruit* free.—Name from αιρω, to destroy. The name was anciently applied to the *Lolium temulentum, bearded Darnel*, on account of its supposed injurious effects: and now to the present genus of grasses, though it has little in common with it.

* *Corolla awnless. Panicle spiked.* (*Koeleria. Pers. Airochloa. Link, Lindl.*

H. 1. A. *cristáta,* Linn. (*crested Hair-grass*); panicle spiked smoothish, leaves hairy. *Engl. Bot. t.* 648. *Hook. Scot. i. p.* 29. *Engl. Fl. v. i. p.* 101.—*Poa, Linn.*

Dry pastures; most frequent in the north, and especially near the sea. *Fl.* June, July. ♃.—Six or eight inches high. *Leaves* linear, short, glaucous. *Spike* shining, ovato-lanceolate. *Glumes* of the *cal.* acute or slightly acuminate, lanceolate, compressed, glabrous or downy and a little rough at the keel. Inner valves of the *corolla* rough, white, delicate, reticulated, bifid, with two longitudinal plicæ.

** *Corolla awned. Panicle lax.*

H. 2. A. *cæspitósa,* Linn. (*turfy Hair-grass*); panicle diffuse, branches scabrous, florets hairy at the base, rather longer than the cal., awn strait inserted near the base of, and not exceeding, in length, the corolla. *Engl. Bot. t.* 1433. *Fl. Scot. i. p.* 29. *Engl. Fl. v. i. p.* 102.—*Deschampsia, Beauv.*

Moist shady places, and borders of fields, plentiful. *Fl.* June—Aug. ♃.—Much tufted. *Culms* 2—4 feet high. *Leaves* linear, acuminate, rough at the margin. *Panicle* large, silvery grey or greenish, much branched. *Spikelets* acute. *Cal. valves* unequal, lanceolate, subglabrous, rather acute, erose. *Florets* with a few longish hairs at the base: upper ones pedunculated; their valves ovate, obtuse, erose, the outer one with 5 short teeth, the inner bifid: Mr. Wilson finds it on Snowdon, viviparous, with the awn inserted above the middle of the valve; and at Llanberris with a small panicle and purple flowers.

3. A. *alpína*, Linn. (*smooth Alpine Hair-grass*); panicle subcoarctate, branches and pedicels perfectly smooth, florets villous at the base, as long as the calyx, awn inserted above the middle and scarcely exceeding the cor. in length, leaves linear. *Engl. Bot. t.* 2102. (*A. lævigata*), *Hook. Scot. i. p.* 29. *Engl. Fl. v. i. p.* 103.

Moist rocks on the higher Scottish mountains. Viviparous on Ben Cruachan, *Rev. Colin Smyth;* and on Carnedd Llewellyn, Wales, *Mr. Wilson. Fl.* June, July. ♃.—About 1 foot high, very smooth. *Leaves* only scabrous to the touch on the upper side, short. *Panicle* rather small, branches erect; the lower ones, when viviparous (which they mostly are) patent and even drooping. *Spikelets* not numerous, larger than in A. *cæspitosa*, and more resembling, as does the whole plant, *A. flexuosa. Cal.* valves equal, quite smooth. *Florets* with a short tuft of hair at the base; *upper one* not pedicellate. Valves of the *cor.* lanceolate, acute, not compressed.—In *A atropurpurea*, *Wahl*, the panicle is fewer flowered, and the florets are considerably shorter than the calyx.

4. A. *flexuósa*, Linn. (*waved Hair-grass*); panicle (when flowering) diffuse, florets villous at the base as long as the cal., awn jointed inserted near the base of, but much longer than, the corolla, leaves setaceous. *Engl. Bot. t.* 1519. *Hook. Scot. i. p.* 30. *Engl. Fl. v. i. p.* 104.

Heaths, and hilly places, abundant. *Fl.* July. ♃.—Habit of the last, but taller. *Florets* larger, and the awns protruded considerably beyond the calyx. Valves of the *cor.* as in the two last species.

5. A. *canéscens*, Linn. (*grey Hair-grass*); panicle rather dense, florets shorter than the calyx, awn clavate shorter than the calyx, leaves setaceous. *Engl. Bot. t.* 1190. *Engl. Fl. v. i. p.* 105.—*Corynephorus*, *Beauv. Lindl.*

On the sandy sea-coasts of Norfolk and Suffolk. *Fl.* July. ♃.—Remarkable in this genus for having the awn clavate, and bearing, at the joint, a tuft of hairs.

H. 6. A. *caryophýllea*, Linn. (*silvery Hair-grass*); panicle divaricated, florets scarcely villous at the base shorter than the cal., awn inserted below the middle jointed longer than the cal., leaves setaceous. *Engl. Bot. t.* 812. *Hook. Scot. i. p.* 30. *Engl. Fl. v. i. p.* 106.

Gravelly hills and pastures, frequent. *Fl.* June, July. ♃.—From 2—6 or 8 inches high. *Leaves* short, few. *Panicle* trichotomous. *Florets* silvery grey. *Cal. valves* nearly equal, lanceolate, the upper part pellucid and white. *Valves* of the *cor.* scabrous at the back, unequal, apex bifid.

7. A. *præcox*, Linn. (*early Hair-grass*); panicle somewhat spiked, florets scarcely villous at the base about as long as the cal., awn twisted inserted below the middle longer than the cal., leaves setaceous. *Engl. Bot. t.* 1296. *Hook. Scot. i. p.* 30. *Engl. Fl. v. i. p.* 105.

Sandy hills and pastures. *Fl.* May, June. ⊙.—One to 3 inches high. *Panicle* few flowered, pale silvery green. *Valves* of the cor. lanceolate, scabrous, when seen under a good glass, those of the *cor.* narrow, acuminate, scabrous; the point bifid.

27. Mélica. *Linn.* Melic-grass.

Panicle lax. *Cal.* of 2 valves, about 2-flowered, with the rudiment of a third floret. *Cor.* 2-valved, awnless. *Fruit* free, covered by the cartilaginous *corolla.*—Name, *Melica* or *Melliga*, given in Italy to the *Sorghum vulgare* on account of the sweet flavour of its stem (*mel, honey*): now applied by Linnæus to a somewhat allied genus.

H. 1. M. *nútans*, Linn. (*Mountain Melic-grass*); panicle nearly simple racemed secund, spikelets drooping ovate two-flowered. *Engl. Bot. t.* 1059. *Fl. Scot. i. p.* 30. *Engl. Fl. v. i. p.* 112.

Woods in somewhat mountainous countries, especially in the north of England and Scotland.—*Fl.* May, June. ♃.—One foot or more high, leafy. *Leaves* linear-lanceolate. *Cal. glumes* ovate, convex, nerved, deep purple brown, margin pale. *Valves* of the *cor.* cartilaginous, unequal, nerved, outer one large. Between the two perfect florets is the rudiment of a third, pedicellate, consisting of a 2-valved hardened *cor.* without either pistil or stamen.

H. 2. M. *uniflóra*, Linn. (*Wood Melic-grass*); panicle branched slightly drooping, spikelets erect ovate with only one perfect floret. *Engl. Bot. t.* 1058. *Fl. Scot. i. p.* 31. *Engl. Fl. v. i. p.* 112.

Shady woods, frequent. *Fl.* May—July. ♃.—Imperfect floret on rather a long footstalk. *Leaves* broader than the last, and whole plant larger. *Scale* of one piece, orange-coloured, thick, "covered by the outer glume of the corolla." (*Wilson.*)

H. 3. M. *cærúlea*, Linn. (*purple Melic-grass*); panicle erect subcoarctate, spikelets erect oblongo-cylindrical, floret much longer than the calyx. *Engl. Bot. t.* 750. *Fl. Scot. i. p.* 31. *Engl. Fl. v. i. p.* 113.—*Molinia, Schrank, Lindl.*

β. panicle pale green, spikelets fewer flowered. *M. alpina, Don. M. depauperata, Lindl.*

Wet heathy places and moors, frequent. β. Clova Mountains. *D. Don. Fl.* Aug. ♃.—Habit very different from the last, but scarcely distinguishable in generic character. *Culms* 1—2 feet high or more. All the *leaves*, which are long and linear, acuminated, springing from the base or from a single joint immediately above it. *Panicle* from 2—8 inches in length, bluish purple, rarely, and probably only when growing in much sheltered situations, green. *Cal. valves* lanceolate, nearly equal. *Florets* generally 2 perfect and one sterile. *Anthers* large, purple.—Brooms are made of the culms in England, according to Withering; and in Skye, Lightfoot says, the fishermen make excellent ropes of them for their nets.

28. Hólcus. *Linn.* Soft-grass.

Panicle lax. *Cal.* of 2 valves, nearly equal, 2-flowered: *Cor.* 2-valved, upper floret with stamens only and awned; lower perfect and awnless. *Fruit* covered by the indurated *cor.*—Name ὁλκος, from ἑλκω, *to extract*, because it was supposed to have the property of drawing out thorns from the flesh.

H. 1. H. *móllis*, Linn. (*creeping Soft-grass*); cal. valves acuminate, imperfect flower with an exserted geniculated awn, joints of the culm with a tuft of hairs, root creeping. *Engl. Bot. t.* 1170. *Hook. Scot. i. p.* 28. *Engl. Fl. v. i. p.* 108.

Pastures and hedges, common. *Fl.* July. ♃.—Mr. Wilson well observes that this species is distinguished by the acute (or almost acuminate) calyx glumes and downy joints of the culm.

H 2. H. *lanátus*, Linn. (*Meadow Soft-grass*); cal. valves rather obtuse mucronate, imperfect flower with a curved awn included within the cal., no tuft of hair at the joints, root fibrous. *Engl. Bot. t.* 1169. *Fl. Scot. i. p.* 28. *Engl. Fl. v. i. p.* 107.

Meadows, pastures, and woods, common. *Fl.* June, July. ♃.—Much resembling the last in general appearance, but clothed with a softer and more abundant pubescence.

29. Arrhenathérum, *Beauv.* Oat-like grass.

Panicle lax. *Cal.* of 2 valves, 2-flowered: lowermost flower with stamens only and a long twisted awn above the base, upper one perfect with a short strait bristle below the point.—Name from αϱϱην, *male*, and αθηϱ, *an awn*.—This genus has altogether the habit of *Avena*, from which it differs in the number and structure of its florets.

H. 1. A. *avenáceum*, Beauv. (*common Oat-like grass*); *Lindl. Syn. p.* 305.—*Holcus avenaceus, Scop.—Engl. Bot. t.* 813. *Hook. Scot. i. p.* 28. *Engl. Fl. v. i. p.* 108.—*Avena elatior, Linn.*

Hedges and pastures, frequent. *Fl.* June, July. ♃.—I am not aware that more than one species exists of this genus. The *Avena precatoria* of *Thuill., Avena nodosa* of *Cullum, Arrh. bulbosum, Dunat* and *Lindl.* are but varieties with a knotted or tuberous base to the stem.—Two to three feet high. *Panicle* long, loose. *Spikelets* greenish brown.

30. Hieróchloe. *Gmel.* Holy-grass.

Panicle mostly lax. *Cal.* of 2 valves, 3-flowered. *Cor.* of 2 valves; the *lateral florets* triandrous, *Pistil* 0: *terminal* (*or central*) *one* perfect, diandrous. *Br.*—*Cor.* permanently membranous. *Fruit* free. *Sm.*—Name from ἱεϱος, *sacred*, and χλοα, or χλοη, *a grass*: so called by Gmelin, because, in some parts of the Prussian dominions, it is dedicated to the Virgin Mary, and strewed before the doors of the churches on festival days, as the *Sweet-flag, Acorus Calamus*, is in England.

1. H. *boreális*, Roem. et Schult. (*northern Holy-grass*); panicle subsecund, peduncles glabrous, florets awnless, outer valves of the cor. ciliated at the margin. *Hook. Scot. i. p.* 28.—*Holcus odoratus, Linn. Sm. Holc. borealis, Schrad.*

In a narrow mountain valley, called *Kella*, in Angus-shire, *G. Don. Fl.* July. ♃.—A valuable discovery of the late acute Mr. G. Don. About 1 f. high, glabrous. *Leaves* linear-acuminate. *Panicle* brownish, glossy. *Spikelets* broadly ovate. *Cal. valves* ovate, acute, rather unequal, sometimes a little serrated at the point. *Florets* rather longer than the *cal.* and the outer valves of a firmer texture, scabrous when highly magnified, distinctly fringed at the margin, the point sharp, but not awned. *Central floret* the smallest.—Smell resembling that of *Anthoxanthum odoratum.* In Iceland it is so plentiful as to be used by the people to scent their apartments and their clothes.

31. SESLÉRIA. *Linn.* Moor-grass.

Panicle spiked. *Cal.* of 2 valves, nearly equal, somewhat awned. *Cor.* of 2 valves, the outer jagged and awned, the inner bidentate. *Fruit* free.—Name from *Leonard Sesler*, an Italian Physician and Botanist.

H. 1. S. *cærúlea*, Scop. (*blue Moor-grass*); panicle spiked ovate bracteated, outer valve of the corolla with one short terminal awn. *Engl. Bot. t.* 1613. *Hook. Scot. i. p.* 31. *Engl. Fl. v. i. p.* 114.—*Cynosurus cær. Linn.*

Mountains in the north of England and Scotland, especially abundant in Limestone regions. *Fl.* April—June. ♃. One of our earliest grasses and a very beautiful one. The *roots* much tufted; plants 6—12 or 18 inches high. *Leaves* linear, obtuse. *Spike* of a shining bluish grey, with large yellow anthers tipped with purple. *Spikelets* generally in pairs oblongo-ovate, the lower ones with an ovate ciliated and toothed bractea at the base. *Cal. valves* ovato-lanceolate, 3-toothed, middle tooth lengthened into an awn and often bifid, pubescent at the keel and margin. *Florets* longer than the cal. Valves of the *cor.* oblongo-ovate; ext. one ribbed, pubescent and ciliated or jagged with about 5 teeth, the middle tooth lengthened into a short awn: *int.* valve bifid at the point.

32. PÁNICUM. *Linn.* Panick-grass.

Panicle spiked; *spikes* compound. *Cal.* 2-valved, unequal, 2-flowered; *ext. valve* minute, sometimes obsolete. *Florets* dissimilar; *ext.* with *Anthers* only or *neuter*, 1—2 valved, *ext. valve* with the texture of the inner glume; *int.* perfect, 2-valved, cartilaginous, enveloping, and somewhat adhering to, the fruit. *Br.*—Name from *Panis? bread;* some species being used for bread.

1. P. *Crus-galli*, Linn. (*loose Panick-grass*); spikes alternate secund divided or simple, flowers imbricated, the cal. and ext. valve of the cor. of the neuter flower hispid, awned or mucronated, int. valve of the cor. of the perfect floret with a hispid mucro, rachis hispid. *Br.*—*Engl. Bot. t.* 876. *Engl. Fl. v. i. p.* 99.—*P. Crus-corvi, Linn.*—*Echinochloa, Beauv. Lindl.*

Fields near London: but probably introduced. *Fl.* July. ⊙.

33. SETÁRIA. *Beauv.* Bristle-grass.

Panicle in a dense, cylindrical *spike*. *Flowers* as in *Panicum*, only subtended by a *bristly involucre*, which includes 2—3 flowers. Name from *seta*, a *bristle.*—*Pennisetum. Br.*—To this genus the true *Millets* belong.

S 1. ~~P~~. *verticillátu~~m~~*a, Beauv. (*rough Bristle-grass*); panicle spiked lobed below, branches whorled, bristles of the involucre rough with reversed teeth. *Panicum verticillatum, Linn.—Engl. Bot. t.* 874. *Engl. Fl. v. i. p.* 98.

In cultivated fields, about London and Norwich; probably not indigenous. *Fl.* July, Aug. ⊙.

H. 2. S. *víridis*, Beauv. (*green Bristle-grass*); panicle spiked continuous, bristles of the involucre rough with erect teeth. *Panicum viride, Linn.—Engl. Bot. t.* 875. *Engl. Fl. v. i. p.* 99.

Fields, about London and Norwich; scarcely indigenous. *Fl.* July, Aug. ♃.

††† *Calyx* 3 *or, mostly, many-flowered.* Gen. 34—42.

34. Póa. *Linn.* Meadow-grass.

Panicle lax. *Cal.* 2-valved, shorter than the florets. *Cor.* 2-valved, valves subovate, bluntish, awnless. *Fruit* free.—Name: *ποα*, grass or pasturage, from *παω*, to feed: the whole genus affording an abundant pasturage for cattle.

* *Spikelets linear or subcylindrical.* Glyceria, *Sm.* and, in part, *Br.*

H. 1. P. *aquática*, Linn. (*Reed Meadow-grass*); panicle erect very much branched, spikelets linear of about 6 obtuse florets which have 7 ribs. *Engl. Bot. t.* 1315. *Hook. Scot. i. p.* 32.—*Glyceria aquat. Engl. Fl. v. i. p.* 116.—*Hydrochloa. Hartman, Lindl.*

Sides of rivers, ponds and ditches. *Fl.* July, Aug. ♃.—Four to 6 feet high, erect. *Leaves* linear, lanceolate, rough. *Ligule* short, obtuse. *Cal.* valves small, ovate, obtuse, membranous, smoothish. *Ext. valves* of *cor.* twice as large as the calyx, *int.* are narrower and bifid at the point.

H. 2. P. *flúitans*, Scop. (*floating Meadow-grass*); panicle nearly erect slightly branched, spikelets linear appressed, of from 7 to 11 obtuse florets which have 7 ribs with short intermediate ones at the base, root creeping. *Engl. Bot. t.* 1520. *Hook. Scot. i. p.* 32. *Glyceria fluitans, Br.—Engl. Bot. v. i. p.* 116.—*Festuca, Linn.*

Ditches and stagnant waters, abundant. *Fl.* July, Aug. ♃.—*Culms* 1—3 feet high, thick and succulent. *Leaves* linear-lanceolate, acute. *Ligule* oblong, pointed. *Panicle* subsecund, very long, slender, *cal.* valves unequal, small, ovate, membranous, obtuse. *Cor.* valves ovato-oblong, thrice as long as the *calyx*; outer ones scabrous. The scale is of 1 thick fleshy piece, which is the principal character of Mr. Brown's genus *Glyceria.* This species is found in New Holland. The *seeds* constitute the *Manna* of our shops, and they are gathered abundantly in Holland, where as well as in Poland and Germany they are used as food. Dr. Théis says, "I have seen the Polanders in the suite of the King Stanislaus gather these *Manna seeds* with great care, on the banks of the Meurthe."

H. 3. P. *marítima*, Huds. (*creeping Sea Meadow-grass*); panicle erect subcoarctate (rigid), spikelets linear of about 5 obtuse florets which are absolutely 5-nerved, leaves convolute, root creeping. *Engl. Bot. t.* 1140. *Hook. Scot. i. p.* 33.—*Glyceria marit. Engl. Fl. v. i. p.* 118.—*Sclerochloa, Lindl.*

Sea-coast, frequent. *Fl.* July, Aug. ♃.—8—12 inches high, rigid, glaucous. *Leaves* involute, somewhat pungent. *Ligule* ovate, bluntish. *Glumes* all firm, cartilaginous, purplish. *Cal.* valves nearly as large as the *cor.*, with mostly 3 ribs. *Florets* hairy at the base, sometimes purplish.

H. 4. P. *dístans*, Linn. (*reflexed Meadow-grass*); panicle spreading, branches at length deflexed, spikelets linear of about 5 obtuse florets which are absolutely 5-nerved, leaves plane, root fibrous. *Engl. Bot. t.* 986. *Hook. Scot. i. p.* 33.—*Glyceria distans, Engl. Fl. v. i. p.* 118.

Sandy ground, principally near the sea. *Fl.* July, Aug. ♃.—One foot high. *Leaves* linear, plane, not pungent. *Ligule* short, obtuse. Branches of the panicle singularly deflexed, slender. *Spikelets* much shorter than in the last species. *Glumes* membranous, softer. *Cal.* valves much smaller than the *cor.* unequal, larger one obscurely 3-nerved. Allied to the last, but very distinct.

5. P. *procúmbens*, Curt. (*procumbent Sea Meadow-grass*); panicle compact ovato-lanceolate disticho-secund, (rigid), spikelets linear-lanceolate of about 4 florets which are 5-ribbed. *Engl. Bot. t.* 532. *Hook. Scot. i. p.* 33.—*Glyceria procumb. Engl. Fl. v. i. p.* 119. *Sclerochloa, Beauv. Lindl.*

Salt marshes in various places, apparently not uncommon. *Fl.* June, Aug. ⊙.—*Culms* procumbent, 6—8 inches long, glaucous. *Leaves* linear obtuse. *Ligule* short, very blunt. *Panicle* about 2 inches long, branches patent distichous, their spikelets secund. *Cal.* valves smaller than the floret, obtuse, strongly ribbed. *Florets* oblong, distant upon the rachis. Inner valve of *cor.* membranous, bifid at the point.

H. 6. P. *rígida*, Linn. (*hard Meadow-grass*); panicle lanceolate disticho-secund (rigid), spikelets linear acute of about 7 florets which are almost ribless, root fibrous. *Engl. Bot. t.* 1371. *Hook. Scot. i. p.* 33.—*Glyceria rigida, Engl. Fl. v. i. p.* 119. *Sclerochloa, Parry. Lindl.*

Walls, rocks, and dry barren soils, frequent. *Fl.* June. ⊙.—Whole plant very rigid and wiry, 3—5 inches long, ascendant or erect. *Leaves* rigid, linear, setaceous. *Ligule* oblong, jagged. *Rachis* angled, sometimes at once bearing the spikelets (when it much resembles *Triticum loliaceum*), but more usually throwing out branches. *Cal.* valves nearly as long as the *cor.* ribbed. *Florets* almost entirely ribless, linear-oblong, rather distant, smooth, bluntish.

7. P. *compréssa*, Linn. (*flat-stemmed Meadow-grass*); panicle subsecund spreading (afterwards subcoarctate), spikelets oblong of from 5—7 obtuse flowers connected by a web, culm compressed, root creeping. *Engl. Bot. t.* 365. *Hook. Scot. i. p.* 34. *Engl. Fl. v. i. p.* 131.

On walls, and in dry barren ground, frequent. *Fl.* June, July. ♃.—One foot or more high, rather glaucous. *Culms* compressed, procumbent at the base. *Leaves* short, linear, acute. *Ligule* very short, blunt. Panicle not much branched. *Cal. valves* ribbed, acute. *Valves* of *cor.* obtuse, outer one very obsoletely ribbed; the lower florets webbed at the base.—Intermediate as it were between the present and the following division.

** *Spikelets ovate.* Poa. *Smith.*

H. 8. P. *alpína*, Linn. (*alpine Meadow-grass*); panicle diffuse, spikelets ovate of 4—5 acute flowers hairy below (but not webbed), leaves broadly linear obtuse, ligule of the upper leaves oblong acute, of the lower ones short obtuse. *Engl. Bot. t.* 1003. *Hook. Scot. i. p.* 34.

β. *glomerata*, spikelets densely crowded. *D. Don. MSS. Hook. Scot. i. p.* 34.

Extremely abundant on the lofty mountains of Scotland and Wales, and very generally viviparous. β. Banks of the Esk. *G. Don.*—*Fl.* July, Aug. ♃.—6—12 inches high, nearly erect. *Leaves* short, linear, obtuse, with a very small mucro. *Spikelets* rather large, close. *Cal.* valves ovato-lanceolate, much compressed; dorsal rib scabrous, terminating in a very short point or short awn, with a short lateral rib or nerve at the base. *Ext. valves* of the *cor.* ovato-lanceolate, acute; dorsal rib scabrous, no lateral ones: lower part villous; upper part glabrous, purple, margin diaphanous: *int. valves* notched or bifid at the extremity.

9. P. *láxa*, Hænk. (*wavy Meadow-grass*); panicle contracted lax slightly drooping, spikelets ovate of about 3 flowers which are acute connected by a web, leaves narrow linear acute, ligules all lanceolate. *Hook. Scot. i. p.* 34. *Engl. Fl. v. i. p.* 122.—*Poa flexuosa. Engl. Bot. t.* 1123.

Found on Ben Nevis by the late *Mr. John Mackay. Fl.* July. ♃.—A very slender subglaucous grass, scarcely able to support the weight of its own panicle, which consequently droops slightly. *Leaves* more numerous than in *A. alpina*, and much narrower. *Florets* very obscurely ribbed, all very acute, green and purple, with diaphanous margins. *Cal. valves* nearly equal, pubescent on the keel, as in the *cor.*, which is also webbed.

10. P. *bulbósa*, Linn. (*bulbous Meadow-grass*); panicle close subspicate, spikelets ovate 4-flowered, florets downy at the keel connected by a web, leaves with a white narrow serrated cartilaginous margin, stems swollen at the very base. *Engl. Bot. t.* 1071. *Engl. Fl. v. i. p.* 123.

East and south of England, principally on sandy sea shores. *Fl.* Apr. May. ♃.—A singular and very distinctly marked species, soon withering after flowering, and then the bulbs are blown about in great quantities on the surface of the sand. It forms the principal part of the herbage on the *Denes* at Yarmouth. Sir James Smith mentions the circumstance of the plant, at Rome, being viviparous: so are my specimens from Germany.

H. 11. P. *triviális*, Linn. (*roughish Meadow-grass*); panicle diffuse, spikelets oblongo-ovate of about 3 flowers which are acute 5-nerved connected with a web, culms and sheaths roughish, ligule oblong, root fibrous. *Engl. Bot. t.* 1072. *Hook. Scot. i. p.* 35. *Engl. Fl. v. i. p.* 124.

Meadows and pastures, common. *Fl.* June, July. ♃.—One foot to two feet high. *Leaves* linear, acute. *Panicle* much branched.—An excellent grass for pasturage and for hay: as is the following species.

H. 12. P. *praténsis*, Linn. (*smooth-stalked Meadow-grass*); panicle diffuse, spikelets oblongo-ovate of about 4 flowers which are acute 5-nerved webbed, culm and sheath smooth, ligule short, root creeping. *Engl. Bot. t.* 1073. *Hook. Scot. i. p.* 35. *Engl. Fl. v. i. p.* 125.

β. *angustifolia;* smaller and with narrower leaves. *P. angustifolia, Linn.*
γ. *subcœrulea;* smaller, and glaucous. *P. humilis, Ehr. Gram. P. subcœrulea. Eng. Bot. t.* 1004.

Meadows and pastures, frequent. β. "in woods." γ. on walls or dry places, especially in alpine countries. *Fl.* June, July. ♃.—Allied to the last, but very constant to the character above given. β and γ appear to be starved states of the plant.

13. P. *ánnua*, Linn. (*annual Meadow-grass*); panicle subsecund divaricated, spikelets oblongo-ovate of about 5 flowers which are a little remote 5-ribbed destitute of web, culm ascending compressed, root fibrous. *Engl. Bot. t.* 1141. *Hook. Scot. i. p.* 35. *Engl. Fl. v. i. p.* 127.

Meadows and pastures, and by road sides, every where. *Fl.* all spring and summer. ⊙.—*Culms* 6—10 inches long, below prostrate and throwing out roots. *Leaves* distichous, linear, rather blunt, flaccid, often waved, bright green. *Ligule* oblong, acute. *Cal.* valves very unequal, ovato-lanceolate, rough at the back, nerved. *Ext.* valve of *cor.* ovato-lanceolate, acute, white and diaphanous at the margin, keel and base hairy.

H. 14. P. *nemorális*, Linn. (*wood Meadow-grass*); panicle slender slightly leaning one way lax attenuate, spikelets ovato-lanceolate of about 3 rather distant slightly webbed flowers, ligule short truncate, culms sub-compressed and sheaths glabrous, root scarcely creeping. *Engl. Bot. t.* 1265. *Hook. Scot. i. p.* 35. *Engl. Fl. v. i. p.* 129.

β. *glauca;* plant smaller and every where glaucous. *Hook. Scot. i. p.* 35.—*P. glauca, Engl. Bot. t.* 1720. *Engl. Fl. v. i. p.* 128.—*P. cæsia, Engl. Bot. t.* 1719. *Hook. Scot. v. i. p.* 34.—*P. glauca.* β. *Wahl.*—*Engl. Fl. v. i. p.* 128.

Common in woods and thickets.—β. abundant on the Welsh and Scotch Alps. *Fl.* June, July. ♃.—One to 3 feet high, slender and delicate in all its parts. *Leaves* narrow, linear, acute. *Panicle* with the branches almost erecto-patent. *Spikelets* scattered. *Cal.* valves unequal, ovato-lanceolate, acute, rather obscurely ribbed. *Ext.* valve of the *cor.* lanceolate, obscurely ribbed, pubescent on the keel and hairy at the base, very slightly webbed. *Inner* valves, as I believe in most, if not all of the Genus, bifid at the point.—Sir James Smith has, in *English Flora*, united his *P. cæsia* with *P. glauca:* making it his var. β. and now that I learn from the same author that it is a plant that Mr. Turner and myself have gathered on Ben Lawers, I am more persuaded than ever that it is but an alpine state of *P. nemoralis.* Mr. Wilson is of the same opinion, and that opinion is founded on the most careful examination of specimens gathered in Wales and in Scotland.

35. Triódia. *Br.* Heath-grass.

Panicle racemed. *Cal.* 2-valved, many-flowered, nearly equal. *Cor.* 2-valved; *ext.* one with three nearly equal teeth, the middle one strait. Name from τρεῖς, three, and οδους, a tooth.

H. 1. T. *decúmbens*, Beauv. (*decumbent Heath-grass*); panicle of few racemed spikelets, cal. as long as the flowers, ligule a tuft of hairs. *Engl. Fl. v. i. p.* 131.—*Poa decumbens, Engl. Bot. t.* 131. *Hook. Scot. i. p.* 36.—*Festuca dec. Linn.*

Abundant in dry mountain pastures, on heaths and moors. *Fl.* July, ♃.—One foot long, procumbent, flowering culms only erect. *Leaves* linear, acuminate, hairy as well as the sheaths. *Cal. valves* nearly equal, lanceolate, acute, nerved, with broad, thin margins, scabrous on their keels. *Ext.* valve of the *cor.* ovate, nerved or ribbed, having a small tuft of hairs on each side at the base; apex with three teeth, middle one the longest, forming an awn: *int.* valve obtuse, entire at the point, ciliated at the angles of the fold.—In habit very distinct from *Poa.*

36. Bríza. *Linn.* Quaking-grass.

Panicle lax. *Cal.* 2-valved. *Cor.* 2-valved, awnless; outer one ventricose; inner one very small and flat. *Fruit* adnate with the *cor.*—Name from βριθω, to balance, the spikelets being delicately suspended.

H. 1. B. *média*, Linn. (*common Quaking-grass*); spikelets broadly ovate of about 7 flowers, cal. shorter than the florets. *Engl. Bot. t.* 340. *Hook. Scot. i. p.* 37. *Engl. Fl. v. i. p.* 133.

Meadows and pastures, frequent. *Fl.* June. ♃.—Whole plant very elegant. *Culms* slender, 1 f. or more high. *Leaves* short, linear, acuminate. *Stipules* short, obtuse. *Panicle* considerably branched, branches thread-shaped, divaricating, purple. *Spikelets* tremulous with the slightest breeze, very smooth, shining purple, more or less green, or greenish white, at the edges. *Cal.* valves very concave, subcompressed. *Ext.* valve of *cor.* much like the *cal.*, but rather smaller; *int.* one minute, resembling a flat scale within the outer one.

H. 2. B. *mínor*, Linn. (*small Quaking-grass*); spikelets triangular about 7-flowered, cal. longer than the florets. *Engl. Bot. t.* 1316. *Engl. Fl. v. i. p.* 132.

Fields in the extreme south of England, very rare. About Bath, in Cornwall, Guernsey, and Jersey.—*Fl.* July. ⊙.—Whole plant much smaller than the last. *Stipules* elongated, acute.

37. Dáctylis. *Linn.* Cock's-foot-grass.

Panicle with the secondary branches short and very dense, subsecund. *Cal.* of 2 unequal valves, the larger one keeled. *Cor.* of 2 lanceolate, scarcely awned valves, enclosing the *fruit.* Except in habit this genus is scarcely to be distinguished from *Festuca.*—Name from δακτυλος, a *finger.*

H. 1. D. *glomeráta*, Linn. (*rough Cock's-foot-grass*); panicle crowded secund, cor. acuminate somewhat awned. *Engl. Bot. t.* 335. *Hook. Scot. i. p.* 37. *Engl. Fl. v. i. p.* 134,

Way sides, meadows and woods, abundant. *Fl.* July. ♃.—One to two feet high. *Leaves* rather broadly linear, acuminate, scabrous. *Panicles* secund. *Spikelets* of 3—4 florets, thickly clustered on the branches, clusters ovate. *Valves* of the *cal.* membranous, smaller than the *cor.* lanceolate, acuminate, unequal, glabrous, scabrous at the back of the valves, which are more or less obliquely keeled. *Ext.* valve of *cor.* sub-cartilaginous, lanceolate, much compressed, scabrous, ribbed, ciliated at the keel, with a short awn at the point: *int.* bifid at the extremity:—said to be advantageously cultivated for cattle.

38. Cynosúrus. *Linn.* Dog's-tail-grass.

Panicle spiked. *Cal.* 2-valved, equal, awned, having a pectinated *involucre.* *Cor.* 2-valved, valves linear-lanceolate; *int.* awned below the extremity or awnless.—Name from κυων, a *dog*, and ουρα, a *tail;* from the shape of the spike.

H. 1. C. *cristátus,* Linn. (*crested Dog's-tail-grass*); raceme spiked linear, florets with a very short awn. *Engl. Bot. t.* 316. *Hook. Scot. i. p.* 37. *Engl. Fl. v. i. p.* 157.

Dry pastures, frequent. *Fl.* July. ♃.—One to a foot and a half high, slender. *Leaves* narrow, linear, acuminate. *Raceme* secund. *Involucre* beautifully pectinated, one at the base of each spikelet, their divisions linear, acute, greenish, sub-glumaceous, a little curved, rough. *Spikelets* 3—5 flowered. *Cal. valves* lanceolate, nearly equal, membranous, rough at the keel, as long as the floret. *Ext. valve* of *cor.* lanceolate, obscurely nerved, green, scabrous, especially at the keel, terminating in a short rough awn; *int.* white, bifid, pubescent at the angles of the fold.—An excellent grass for dry pastures.

2. C. *echinátus,* Linn. (*rough Dog's-tail-grass*); raceme in an ovate spike, florets with awns as long as the cor. *Engl. Bot. t.* 1333. *Engl. Fl. v. i. p.* 137.

Sandy sea shores of the extreme south of England; as Kent, Sussex, but principally in Jersey. *Fl.* July. ⊙.

39. Festúca. *Linn.* Fescue-grass.

Panicle lax or coarctate, or spiked. *Cal.* of 2 unequal valves. *Cor.* of 2 lanceolate valves; *ext.* acuminate or awned at the summit.—Name from the Celtic, *fest*, according to Théis, which signifies *food, pasturage.*

H. 1. F. *ovína,* Linn. (*Sheep's Fescue-grass*); panicle subsecund subcoarctate, spikelets oblong, of about 4—5 flowers with short awns, culms square upward, leaves setaceous. *Engl. Bot. t.* 585. *Hook. Scot. v. i. p.* 38. *Engl. Fl. v. i. p.* 139.

β. (Sm.) *rubra;* with a purplish panicle. *F. rubra, With.*

γ. (Sm.) *cæsia;* plant glaucous. *Sm. Engl. Fl.*—*F. cæsia, Engl. Bot. t.* 1917.

δ. (Sm.) *tenuifolia;* leaves longer and very slender more numerous, florets acuminate, awnless. *F. tenuifolia, Sibth. Schrad.*

ε. *vivipara;* plant taller, flowers viviparous. *F. ovina* β. *Linn. Hook.*—γ. *Schrad.*—*F. vivipara, Engl. Bot. t.* 1355. *Engl. Fl. v. i. p.* 140.

Abundant on dry elevated pastures. ε. Frequent on the mountains of Wales and Scotland. *Fl.* June, July. ♃.—*Leaves* mostly short, often curved, smooth or slightly scabrous, much tufted and affording excellent food for sheep. Dr. Macculloch says that the greater portion of the vegetation in the Hebrides is composed of this and the following species. *Culm* 4—8 inches or a foot high, in the upper part more or less distinctly 4-sided. *Cal.* valves much shorter than the *cor.*, acute, subglabrous. *Cor. outer* valve more or less glabrous, sometimes pubescent upward or even hairy, (*F. hirsuta, Host,*), terminated by an awn, which, though varying in size and in β. obsolete, at the utmost does not exceed half the length of the valve. Whole plant more or less glaucous and having a purple tint in the spikelets. *F. vivipara, Sm.* affords no character by which it may be distinguished from *F. ovina.* I should be more inclined to consider the *F. tenuifolia* of Sibth. distinct, than any other of the vars.

H. 2. F. *duriúscula*, Linn. (*hard Fescue-grass ;*) panicle subsecund subcoarctate, spikelets oblong of about 6 flowers with short awns, stem-leaves nearly plane, radical ones subsetaceous, root fibrous. *Engl. Bot. t.* 470. *Hook. Scot. i. p.* 38. *Engl. Fl. v. i. p.* 141.

Pastures and waste ground. *Fl.* June, July. ♃.—The *leaves* on the stem are sometimes convolute, and then they appear setaceous. A foot to a foot and a half high, by which size and by its stouter habit, it is better distinguished from *F. ovina*, than by any character I can discover. It is possible that viviparous states of this may be confounded with the *F. vivipara* of Smith.

H. 3. F. *rúbra*, Linn. (*creeping Fescue-grass*); "panicle unilateral spreading, florets longer than their awns, leaves downy on their upper side, more or less involute, root extensively creeping." *Engl. Bot. t.* 2056. *Engl. Fl. v. i. p.* 141. *F. duriuscula β. Hook. Scot. i. p.* 38.

Light sandy pastures, near the sea, plentiful, and "in mountain pastures and alpine precipices." *Fl.* July. ♃.—In deference to the opinion of the lamented author of Engl. Bot. and other able Botanists, I again restore this plant to the rank of a species which I had before considered a var. of *F. duriuscula.* At the same time I must observe that the only characteristic exists in the creeping root; and may not this be owing to a peculiarity in the soil and other accidental circumstances?

H. 4. F. *bromóides*, Linn. (*barren Fescue-grass*); panicle secund racemed, flowers shorter than the awn monandrous, culm above leafless. *Engl. Bot. t.* 1411. *Hook. Scot. i. p.* 39. *Engl. Fl. v. i. p.* 142.

Dry pastures and on walls, less frequent in Scotland, but not rare about Edinb. *Fl.* June. ⊙. or ♂. (*Schrad.*)—Six to 8 inches high. *Leaves* linear, setaceous, complicate. *Cal. valves*, very unequal, lanceolate, acuminate, nerved, rough at the keel. *Florets* about 6, in each spikelet. *Ext.* valve of *cor.* linear-lanceolate, scabrous, tapering into a strait awn, thrice the length of the valve.

H. 5. F. *Myúrus*, Linn. (*Wall Fescue-grass*); panicle secund elongated contracted, flowers shorter than the awn monandrous, culm leafy in its upper part. *Engl. Bot. t.* 1412. *Hook. Scot. i. p.* 39. *Engl. Fl. v. i. p.* 143.

Walls and barren places, frequent in England: not common in Scotland. *Fl.* June. ⊙.—Much resembling the last, but taller. One foot high. *Leaves* shorter, their *sheaths* longer, and springing even from the upper part of the culm. *Panicle* often 4—5 inches long. *Cal. valves* and florets narrow, rather more scabrous, *awns* longer.

6. F. *uniglúmis*, Soland. (*single-glumed Fescue-grass*); panicle a simple erect two-ranked subsecund raceme, one valve of the calyx obsolete. *Engl. Bot. t.* 1430. *Engl. Fl. v. i. p.* 143. *Stipa membranacea, Linn.?* (*Sm.*)

On the sandy sea-coast, principally of Sussex. On the coasts of Essex, Suffolk, Dorsetshire, and in Anglesea. *Fl.* June. ⊙. (♂. Sm.). This plant is remarkable for the suppression of one of the valves of its calyx, by which the species is at once known.

H. 7. F. *calamária*, Sm. (*reed Fescue-grass*); panicle subsecund much branched spreading nearly erect, spikelets oblong awnless 3—5-flowered, leaves linear-lanceolate. *Engl. Bot. t.* 1005. *Hook. Scot. i. p.* 39. *Engl. Fl. v. i. p.* 145.—*Schedonorus sylvaticus, Beauv. Lindl.*

β. minor. *Hook. Scot. i. p.* 39. *Engl. Fl. v. i. p.* 146. *F. decidua, Engl. Bot. t.* 2266.

Mountainous woods, not uncommon. *Fl.* July. ♃.—Two to 3 feet high, with large and broad *leaves*. *Cal. valves* narrow, linear-lanceolate, very unequal, smaller one single nerved, larger with 3 nerves. *Florets* rather distant upon the rachis. *Ext. valve* of *cor.* scabrous, lanceolato-acuminate.

H. 8. F. *loliácea*, Huds. (*spiked Fescue-grass*); raceme spiked distichous, spikelets linear oblong nearly sessile remote, florets cylindrical awnless, outer valve of cor. obtuse. *Engl. Bot. t.* 1821. *Hook. Scot. i. p.* 40. *Engl. Fl. v. i. p.* 146.—*Schedonorus, Dumort. Lindl.*

Moist pastures and meadows, not unfrequent. *Fl.* June, July. ♃.—Two feet high. *Leaves* few, short, linear, acute. *Racemes* 2—5 inches long, *Rachis* flexuose, *spikelets* nearly sessile, especially the upper ones, 5—6-flowered. *Cal.* valves unequal, lanceolate, acute, 7-ribbed. *Outer valves* of the *cor.* ovato-lanceolate, nerved, diaphanous at the apex and obtuse: (hence scarcely agreeing with the generic character,) slightly scabrous and only on the nerves.

9. F. *praténsis*, Huds. (*Meadow Fescue-grass*); panicle patent branched, spikelets linear many-flowered, florets cylindrical awnless, outer valve of cor. acute, leaves linear, root fibrous. *Engl. Bot. t.* 1592. *Hook. Scot. i. p.* 40. *Engl. Fl. v. i. p.* 147.—*Schedonorus. Beauv. Lindl.*

Moist meadows and pastures, common. *Fl.* June, July. ♃.—One to 2 feet high. Distinguished at first sight from the last by its panicle (not spiked) raceme; also by the florets, which, though much resembling the last, have their outer valve more acute.

H. 10. F. *elátior*, Linn. (*tall Fescue-grass*); panicle patent very much branched, spikelets ovato-lanceolate many-flowered, florets cylindrical subaristate, leaves linear-lanceolate, root creeping. *Engl. Bot. t.* 1593. *Hook. Scot. i. p.* 40. *Engl. Fl. v. i. p.* 148.—*Schedonorus, Lindl.*

Moist meadows, banks of rivers, &c.; not common. *Fl.* June, July. ♃.

40. Brómus. *Linn.* Brome-grass.

Panicle lax. *Cal.* of 2 valves, many-flowered. *Cor.* of 2 lanceolate *valves; ext.* one awned below the bifid extremity. (Inner valve generally fringed at the folds, *Sm.*)—Name from ϐϱωμος, given by the Greeks to a kind of *oat*, and that from ϐϱαμα, *food.*

H 1. B. *gigánteus*, Vill. (*tall Brome-grass*); panicle branched drooping towards one side, spikelets lanceolate compressed, florets shorter than the awn, leaves linear-lanceolate ribbed. *Linn.*—*Festuca gigantea, Engl. Bot. t.* 1820. *Hook. Scot. i. p.* 39. *Engl. Fl. v. i. p.* 144.

β. *triflora;* panicle more erect, slenderer, with 3 flowers, leaves narrower. *Hook. Scot. i. p.* 39. *Engl. Fl. v. i. p.* 144. *Festuca triflora, Engl. Bot. t.* 1918. *Bromus trifl. Linn.*

Shady woods and moist hedges. β. In Norfolk and near Forfar, in Scotland: probably not unfrequent. *Fl.* July, Aug. ♃.—A sea-grass, 3—4 feet high, with broad *leaves*, having the habit and the essential character of *Bromus*, but sometimes arranged by authors with *Festuca. Panicle* large. *Spikelets* with from 3—6 florets. *Cal.* valves very unequal, larger ones with 3 ribs. *Outer valve* of *cor.* lanceolate, obscurely ribbed, nearly glabrous, membranous at the edge upward. *Awn* very long, inserted a little below the bifid point.

H 2. B. *ásper*, Linn. (*hairy Wood Brome-grass*); panicle branched drooping, spikelets linear-lanceolate compressed, florets remote subcylindrical hairy longer than the strait awn, leaves uniform the lower ones hairy. *Engl. Bot. t.* 1172. *Hook. Scot. i. p.* 42. *Engl. Fl. v. i. p.* 158.

Moist woods and hedges. *Fl.* June, July. ⊙. or ♂. *Sm.* (♃. *Schrad*).—Four to 6 feet high: *leaves* broad.

3. B. *stérilis*, Linn. (*barren Brome-grass*); panicle drooping slightly branched, spikelets linear-lanceolate, florets remote subcylindrical scabrous shorter than the strait awn, leaves pubescent. *Engl. Bot. t.* 1030. *Hook. Scot. i. p.* 43. *Engl. Fl. v. i. p.* 159.

Waste ground, fields, and hedges, common. *Fl.* June, July. ⊙.—Two feet high. Remarkable for its long, narrow, much awned and drooping spikelets.

4. B. *diándrus*, Curt. (*upright annual Brome-grass*); panicle erect slightly branched, spikelets linear-lanceolate, florets remote subcylindrical subscabrous about as long as the strait awn, stamens 2 (3, *Schrad.*), leaves subglabrous. *Engl. Bot. t.* 1006. *Hook. Scot. i. p.* 43. *Engl. Fl. v. i. p.* 60.—*B. madritensis, Linn.*

Rare, on sandy barren wastes; principally in the south of England.—About Edinburgh. *Mr. Arnott. Fl.* June, July. ⊙.—One foot high. Allied to *B. sterilis;* but the panicle is smaller, erect or erecto-patent, often purplish.

5. B. *secalínus*, Linn. (*smooth Rye-Brome-grass*); panicle spreading, peduncles but little branched, spikelets oblongo-ovate compressed of about 10 subcylindrical glabrous rather remote flowers, longer than the awn. *Engl. Bot. t.* 1171. *Hook. Scot. i. p.* 41. *Engl. Fl. v. i. p.* 151.

Corn-fields; not rare in England. Coast of Angus and Fifeshire in Scotland, *G. Don*; and at Cleish, *Mr. Arnott*. Near Elgin, *Rev. G. Gordon*. *Fl.* July, Aug. ⊙.—Two to three feet high. *Leaves* somewhat hairy. *Cal.* and *ext.* valve of *cor.* broadly ovate; *int.* valve bifid at the point, the margin strongly ciliated. When the seeds ripen, the upper spikelets are pendulous, and the florets exhibit more evidently their distant mode of insertion.

H. 6. B. *velutínus*, Schrad. (*downy Rye-Brome-grass*); "panicle spreading scarcely subdivided, spikelets ovato-oblong of from 10—15 crowded elliptical downy florets, awns as long as the glumes, leaves slightly hairy." *Sm.—Hook. Scot. i. p.* 41. *Engl. Fl. v. i. p.* 152. *B. multiflorus. Engl. Bot. t.* 1884.

Corn-fields, rare. About Edinburgh. *Sm. Fl.* June, July. ⊙.—Allied to *B. secalinus*, but *awns* longer (at length patent, Schrad.), and the *glumes* are pubescent; circumstances but too liable to vary.

H. 7. B. *mollis*, Linn. (*soft Brome-grass*); panicle erect close compound, spikelets ovate subcompressed, florets imbricated compressed pubescent, awn strait about as long as the glume, leaves very soft pubescent. *Engl. Bot. t.* 1078. *Hook. Scot. i. p.* 41. *Engl. Fl. v. i. p.* 153.

Meadows, pastures, banks, road sides, fields, &c. every where. *Fl.* June. ♂.—One to two feet high. *Panicle* 2—3 inches long. *Spikelets* standing nearly erect. *Florets* 5—10. *Ext. valve* of the *cor.* convex, by no means forming such cylindrical florets as in the two last species.

8. B. *racemósus*, Linn. (*smooth Brome-grass*); panicle erect, peduncles simple, spikelets ovate subcompressed glabrous, florets imbricated compressed, awn strait about as long as the glume, leaves slightly hairy. *Engl. Bot. t.* 1079. *Hook. Scot. i. p.* 41. *Engl. Fl. v. i. p.* 154. *B. pratensis. Engl. Bot. t.* 920.

Meadows and pastures. *Fl.* June, July. ⊙. ♂. (*Schrad*).—I fear scarcely different from the preceding, except in being more glabrous.

9. B. *squa~~m~~rrósus*, Linn. (*Corn Brome-grass*); panicle drooping, peduncles simple, spikelets ovato-lanceolate subcompressed, florets nearly glabrous imbricated compressed, awn divaricating, leaves pubescent. *Engl. Bot. t.* 1885. *Hook. Scot. i. p.* 42. *Engl. Fl. p.* 155.

Corn-fields, not indigenous. In Somersetshire and Sussex. In Scotland. *G. Don. Fl.* June, July. ⊙.—A most distinct species, remarkable for its spreading *awns*.

H. 10. B. *arvénsis*, Linn. (*taper Field Brome-grass*); panicle spreading (at length drooping), peduncles branched, spikelets lanceolate compressed, florets imbricated compressed glabrous, about as long as the strait awn, leaves hairy. *Engl. Bot. t.* 1984. *Hook. Scot. i. p.* 42. *Engl. Fl. v. i. p.* 156.

Corn-fields, rare in England. Not uncommon about Glasgow. *Mr. Hopkirk. Fl.* June, July. ⊙.—Two to three feet high. Distinguished by its rather large, but slender and at length drooping panicle, and spikelets which have mostly a purplish tinge.

11. B. *eréctus*, Huds. (*upright Brome-grass*); panicle erect, spikelets linear-lanceolate compressed, florets subcylindrical remote glabrous, longer than the strait awn, root-leaves very narrow ciliated. *Engl. Bot. t.* 471. *Hook. Scot. i. p.* 42. *Engl. Fl. v. i. p.* 157.

In fields and by road sides, especially in a sandy soil over chalk: in Oxfordshire, Cambridgeshire, Norfolk, and Kent. In the King's Park, Edinburgh. *Mr. G. Anderson. Fl.* July. ♃.—Two to three feet high. This is truly perennial, which does not appear to be the case with any other *Bromi.* Its habit is that of *Brachypodium sylvaticum.* The *root leaves* are narrow; the *spikelets* erect.

41. AVÉNA. *Linn.* Oat, or Oat-grass.

Panicle lax. *Cal.* 2-valved, 2-flowered. *Cor.* of two lanceolate *valves*, firmly enclosing the seed: *ext.* one bearing a twisted dorsal *awn*; upper florets often imperfect.—Name of doubtful origin. The ancients applied it to the *Brome-grass.*—*Oat*, de Théis tells us, comes from the Celtic word *atan*, the *Oat*, and that from *etan*, to *eat*.

1. A. *fátua*, Linn. (*wild Oat*); panicle erect, spikelets drooping of about 3 scabrous flowers smaller than the calyx villous below, all awned, root fibrous. *Engl. Bot. t.* 2221. *Hook. Scot. i. p.* 43. *Engl. Fl. v. i. p.* 162.

Corn-fields, frequent. *Fl.* June—Aug. ⊙.—Two to three feet high. *Leaves* linear-lanceolate. *Cal. valves* large, membranous, ovato-lanceolate, shining at the margins, keeled, acuminate, ribbed. *Ext. valve* of *cor.* with long fulvous hairs at its base, bifid at the point. *Awn* to each floret, long and twisted, and constituting an excellent Hygrometer.—The cultivated Oat, *A. sativa*, differs from this in having one or more upper flowers imperfect and awnless, in the shorter awn and absence of hairs at the base of the florets.

2. A. *strigósa*, Schrad. (*bristle-pointed Oat*); panicle erect, branches all secund, spikelets of perfect florets each awned as long as the calyx and terminated by two bristles. *Engl. Bot. t.* 1266. *Engl. Fl. v. i. p.* 163.

Corn-fields; common both in England and Scotland. *Fl.* June, July. ⊙.—Omitted in the *Flora Scotica*, though not an uncommon plant in the country. I have gathered it in the Isle of Skye, and by the Dee-side above Mar-Lodge, Aberdeenshire.

3. A. *praténsis*, Linn. (*narrow-leaved Oat-grass*); raceme erect simple, spikelets erect oblong of about 3—5 florets longer than the

cal., leaves glabrous finely serrated, lower ones involute, sheaths scarcely scabrous. *Engl. Bot. t.* 1204. *Hook. Scot. i. p.* 43. *Engl. Fl. v. i. p.* 164.

Dry pastures and heathy and mountainous places. *Fl.* July. ♃.—*Leaves* short, finely serrated with minute cartilaginous teeth at the margins, the lower ones involute.

4. A. *alpína*, Sm. (*great Alpine Oat-grass*); raceme slightly compound, spikelets erect oblong of about 5—6 florets longer than the calyx, leaves glabrous linear acuminated flat minutely serrated, sheaths rounded subscabrous, culm cylindrical. *Sm. in Linn. Trans. v.* 10, *p.* 335. *Engl. Fl. v. i. p.* 165. *A. planiculmis, Engl. Bot. t.* 2141. *Hook. Scot. i. p.* 43. (*not of Schrad.*).

Rocky places on the Highland mountains. Clova in Angus. *G. Don.* On Ben Lawers, abundant. In North Wales. *Mr. Wilson. Fl.* June, July. ♃.—This plant I had, as well as Sir James Smith, confounded with the *Avena planiculmis* of Schrad.; and my single specimen from Mr. Don I had attached to the same paper with the true *planiculmis* of Schrad. This it must be allowed comes very near the last species, and is principally distinguished by its stouter habit, slightly compound raceme, and especially by the broad flat *leaves*.

5. A. *planicúlmis*, Schrad. (*flat-stemmed Oat-grass*); panicle erect compound, spikelets erect linear-oblong of from 5—7 florets much longer than the calyx, leaves scabrous broadly linear suddenly acute minutely serrated, sheaths flat sharply carinated scabrous, lower part of the culm slightly compressed two-edged. *Schrad. Fl. Germ. v. i. p.* 381. *t.* 6. *f.* 2. (*not of Engl. Bot. nor of Hook. Scot.*)

Glen Sannox, on the ascent of Goat-fell from Loch Rannoch, Isle of Arran, Scotland. *Mr. Stuart Murray. Fl.* July. ♃.—Mr. Murray had the good fortune to discover this interesting grass in 1826, and has since cultivated it in the Glasgow Botanic Garden, where it preserves all its characters, of which none are so striking as the flat, sharply carinated sheaths, and the great breadth of its leaves; in the cultivated specimen where the plant is nearly 3 feet high, equalling ½ an inch in breadth. They are, too, almost equal in width throughout; at the extremity suddenly coming to a sharp point. *Panicle* with many, but short branches. *Spikelets* much longer and larger than in *A. alpina*. *Florets* smaller.

H. 6. A. *pubéscens*, Linn. (*downy Oat-grass*); panicle erect nearly simple, spikelets erect of about 3 florets, a little longer than the cal., outer valves of cor. jagged, leaves plane downy edges smooth. *Engl. Bot. t.* 1640. *Hook. Scot. i. p.* 43. *Engl. Fl. v. i. p.* 164. *Trisetum pub. Pers. Lindl.*

Dry pastures, especially in chalky or limestone countries. *Fl.* June, July. ♃.—Nothing, as it appears to me, can be more unnatural than to place this plant in a different genus from the two preceding. In habit it partakes of the character of the larger-flowered and "field species," if I may so call them, of the Genus, *A. fatua and strigosa*, and of the following smaller flowered species. *Mr. Lindley* confines the Genus

Trisetum to *T. pubescens* and *T. flavescens*. *Mr. Dumortier* adds to it our *A. pratensis* and *Aira præcox*.

7. A. *flavéscens*, Linn. (*yellow Oat-grass*); panicle much branched lax, spikelets of about 3 flowers equal in length to the longer of the very unequal cal. valves, outer valve of the cor. with two terminal setæ. *Engl. Bot. t.* 952. *Hook. Scot. i. p.* 44. *Engl. Fl. v. i. p.* 166.

Dry meadows and pastures, frequent. *Fl.* July. ♃.—It has the smallest flowers of all our *Oat-grasses*, and may readily be distinguished by that circumstance, by the two terminal setæ on the outer valve of the *cor.* and by the unequal *cal. valves*. Floral pedicels downy with a small tuft of hairs at the top, and there is a terminal abortive flower, reduced to a pedicellated bristle, hairy at its base.

42. Arúndo. *Linn.* Reed.

Panicle loose. *Cal.* 2-valved, unequal, many-flowered. *Cor.* of 2, very unequal *valves*, all, except the lower and imperfect one, surrounded by a tuft of hairs. *Fruit* free, covered by the *cor.* Name; *Arundo*, the Latin for a *Reed*; "ab arendo, quod cito arescat." De Théis says it comes from *arn*, the Celtic word for *water*. There is abundant room for the exercise of imagination in the derivation of names.

1. A. *Phragmítes*, Linn. (*common Reed*); panicle spreading, cal. valves acuminate coloured ribbed and about 5-flowered, leaves lanceolate acuminato-cuspidate. *Engl. Bot. t.* 401. *Hook. Scot. i. p.* 27. *Engl. Fl. v. i. p.* 168.

Abundant in ditches, margins of lakes, rivers, &c. *Fl.* July. ♃.—Six feet or more high; the tallest of our Grasses. *Panicle* large, purple-brown, at length drooping, very handsome. *Valves* of the *cal.* very unequal: *ext.* ovato-lanceolate, many-ribbed: *int.* twice its length, thin, membranous, obsoletely ribbed. As the flowers advance, the tufts of hairs increase, at length becoming very silky.—This plant forms frequently patches of immense extent, called *Reed-ronds* in some parts of the east of England, where harbour many aquatic birds and the rare *Parus biarmicus*, or *bearded Titmouse*. An extensive use is made of the culms for thatching, garden screens, for walls and floors which are afterwards covered with clay, &c. Fishing rods, &c. are made of the much stouter culms of *Arundo Donax*, a native of the south of Europe.

** *Inflorescence spiked.* (*Solitary flowers or spikelets sessile upon a common stalk or Rachis.*—Gen. 43—52.)

† *Flowers or spikelets distichous or inserted on all sides.*—Gen. 43—49.

43. Élymus. *Linn.* Lyme-grass.

Spikelets 2 or 3 from the same point. *Cal.* 2-valved, lateral (both the valves on one side the spikelet), 2—3 flowered, all perfect. *Cor.* 2-valved. Name, ἔλυμος, given by the Greeks to the *Panic-grasses*, perhaps because they grew abundantly about *Elyma* in Greece. (*Théis*).

1. E. *arenárius*, (*upright Sea Lyme-grass*); spike close erect, spikelets geminate hairy, flowers awnless as long as the lanceolate valves of the cal., leaves involute pungent. *Engl. Bot. t.* 1672. *Hook. Scot. i. p.* 46.

Sandy sea-shores, frequent. *Fl.* (rarely) July. ♃. *Root* much creeping in the loose soil; hence it becomes of great value, as well as the *Ammophila arenaria*, for preserving a considerable extent of our own coasts and those of Holland from the encroachments of the sea. *Culms* 3—4 f. high, glabrous. *Leaves* glaucous, pungent. *Spikes* 4—6 inches long. *Spikelets* of about 3 flowers, on the rachis. *Cal.* valves 2, lanceolate, acuminate. Valves of the *cor.* resembling them, but the *ext.* one broader; *int.* bifid at the point, angles of the folds ciliated.—The seeds are said to be made into bread in Iceland.

2. E. *geniculátus*, Curt. (*pendulous Sea Lyme-grass*); spike lax bent downwards with one angle, spikelets geminate, cal. valves subulate glabrous longer than the flowers, leaves involute pungent. *Engl. Bot. t.* 1586. *Engl. Fl. v. i. p.* 177.

Near Gravesend in a salt marsh: very rare. *Fl.* July. ♃.—A very remarkable plant, and I believe quite distinct from the foregoing.

H. 3. E. *europǽus*, Linn. (*wood Lyme-grass*); spike erect compact glabrous, spikelets ternate 1—2 flowered, cal. valves setaceous, flowers terminated by a long awn, leaves flat. *Engl. Bot. t.* 1317. *Engl. Fl. v. i. p.* 178.

Woods and thickets, especially in a chalky soil: apparently not rare in the midland and northern parts of England, but unknown to Scotland. *Fl.* June. ♃.

It would appear to me much more natural to unite this with *Hordeum*, as Hudson had done. My specimens have the calyx mostly one-flowered, and I do not see how it differs from those *Hordea*, which have their *lateral* flower *fertile*. In habit too it quite accords, as well as in the long awns and subulate cal. valves.

44. Hórdeum. *Linn.* Barley.

Cal. lateral, 2-valved, single-flowered, ternate, central floret perfect, lateral ones mostly imperfect (having often at the back of the inner valve a bristle or abortive floret). Outer valve of the *cor.* awned. *Fruit* incorporated with the *cor.*—Name of dubious origin.

1. H. *murínum*, Linn. (*Wall Barley*); cal. valves of the intermediate floret linear-lanceolate ciliated, those of the lateral florets setaceous scabrous. *Engl. Bot. t.* 1971. *Hook. Scot. i. p.* 46. *Engl. Fl. v. i. p.* 179.

Waste ground, by walls and road sides: common in England, rare in Scotland. About Edinburgh; and near St. Andrews, (*Mr. Heriot*), which is perhaps its most northerly range.—*Fl.* June, July. ⊙.

H. 2. H. *praténse*, Huds. (*Meadow Barley*); all the cal. valves setaceous and scabrous. *Engl. Bot. t.* 409. *Hook. Scot. i. p.* 46. *Engl. Fl. v. i. p.* 180.

Moist meadows and pastures in England, frequent: rare in Scotland. *Mr. Neill* finds it about Salisbury Craigs. *Fl.* July. ⊙.

H, 3. H. *marítimum*, With. (*Sea-side Barley*); cal. valves smoothish, the interior one of the lateral florets semi-lanceolate, the rest setaceous. *Engl. Bot. t.* 1205. *Hook. Scot. i. p.* 46. *Engl. Fl. v. i. p.* 180.

Light dry pastures and sandy ground near the sea, not rare in England. In Scotland it has only been found in Angus-shire by *Mr. G. Don. Fl.* July. ⊙.—All our British species of this genus are admirably characterized by the form, &c. of the *cal. valves.* The present is the smallest of the species, procumbent at the base and more glaucous than the rest.

45. TRÍTICUM. *Linn.* Wheat or Wheat-grass.

Cal. 2-valved, many-flowered; its valves opposite, transverse, the sides (not the back) of one of them directed to the rachis, nearly equal. *Cor.* 2-valved, valves lanceolate, *ext.* one acuminate or awned at the extremity: *int.* bifid at the point.—There are two natural groupes in this genus: 1st, the large annual species, exotics to our country, which are cultivated so extensively as *Bread-corn;* and, 2dly, the smaller perennial species, many of which are natives with us. These, some authors look upon as 2 distinct genera; *Triticum* and *Agropyrum*, *Beauv. Lindl.* We have only to consider the latter genus, or groupe.—Name *Triticum*, "quod *tritum* est e spicis:" because it is thrashed or beaten from the spikes.

* *Spikelets distichous.*

1. T. *canínum*, Huds. (*fibrous rooted Wheat-grass*); *cal.* valves awned with 3—5 ribs, and about 5 awned florets, leaves plane, root fibrous. *Engl. Bot. t.* 1327. *Hook. Scot. i. p.* 44. *Engl. Fl. v. i. p.* 184. *Elymus can. Linn.*

Woods and banks, frequent. *Fl.* July. ♃.—Best distinguished from the following by its fibrous root.

2. T. *répens*, Linn. (*creeping Wheat-grass, or Couch-grass*); cal. valves many-ribbed with from 4—8 awned (rarely awnless) florets, leaves plane, root creeping. *Engl. Bot. t.* 909. *Hook. Scot. i. p.* 44. *Engl. Fl. v. i. p.* 182.

Fields and waste places, every where. *Fl.* throughout the summer months. ♃.—In habit between the preceding and the foregoing, having a glaucous tint when growing near the sea. *Leaves* plane, or nearly so. *Spikelets* smaller and less compressed than in *T. junceum. Cal.* and *ext. valves* of the *cor.* with from 5—9 nerves, acute or terminated by an awn of greater or less length.—Pest of the corn-fields, and difficult to be extirpated on account of its long creeping roots. *Mr. Wilson* finds it viviparous, in which state it is mentioned by Dumortier.

H. 3. T. *júnceum*, Linn. (*sea rushy Wheat-grass*); valves of the cal. obtuse much ribbed with from 4—5 awnless florets, leaves involute pungent, root creeping. *Engl. Bot. t.* 814. *Hook. Scot. i. p.* 44. *Engl. Fl. v. i. p.* 182.

Sandy sea-shores, frequent. *Fl.* July. ♃.—Whole plant glaucous, rigid, 1 foot and a half to 3 feet high. *Spike* long. *Spikelets* oblong, much compressed, distant, sessile. *Cal. valves* oblongo-lanceolate, often with 3 teeth at the point. *Ext. valves* of the *cor.* similar, with 5 nerves.

4. T. *cristátum*, Schreb. (*crested Wheat-grass*); valves of the cal. subulate keeled awned scarcely nerved with about 4 awned florets, spikelets much crowded. *Engl. Bot. t.* 2267. *Hook. Scot. i. p.* 45. *Engl. Fl. v. i. p.* 184.

Sea-side between Arbroath and Montrose (*G. Don*); where, however, I should fear it cannot be considered wild. It is a native of the south-eastern parts of Europe. *Fl.* July. ♃.

** *Spikelets secund.*

H. 5. T. *loliáceum*, Sm. (*dwarf Sea-Wheat-grass*); valves of the cal. indistinctly 3-nerved obtuse of many awnless florets, root fibrous annual. *Engl. Bot. t.* 221. *Hook. Scot. i. p.* 45. *Engl. Fl. v. i. p.* 186.—*Catopodium, Link. Lindl.*

Sandy sea-shores of Norfolk, Suffolk, and Essex. North Wales and Isle of Man, *Mr. Wilson.* East coast of Scotland, not unfrequent. *Fl.* June, July. ⊙.—Singularly stiff and wiry, as much so as *Poa rigida*, which it greatly resembles, branching from the very base, 3—4 inches high. *Leaves* linear, rigid, plane. *Spikelets* more or less distant, secund, lower ones sometimes compound. *Ext. valve* of the *cor.* broadly ovate, concave.

46. BRACHYPÓDIUM. *Beauv.* False Brome-grass.

Spikelets alternate, remote, cylindrical-compressed. *Cal.* 2-valved, many-flowered, *valves* opposite, transverse, unequal. *Cor.* 2-valved, the *valves* lanceolate; *ext.* one generally awned at the extremity; *int.* retuse. Name from βραχυς, *short*, and πους, *a foot;* from the sessile or nearly sessile spikes.—These sessile spikes and the *terminal* awn distinguish this genus from *Bromus*, where the British plants of this genus had been placed. There are many continental species, which preserve the same habit: and the individuals naturally come near to the British species of *Triticum.* Beauvois, perhaps with justice, refers *Trit. loliaceum* to it.

H. 1. B. *sylváticum*, Beauv. (*slender false Brome-grass*); spike drooping, spikelets nearly cylindrical secund hairy, awns longer than the florets. *Lindl. Syn. p.* 297. *Festuca sylv. Engl. Fl. v. i. p.* 149. *Bromus sylv. Poll.*—*Engl. Bot. t.* 729. *Hook. Scot. i. p.* 40.

Woods and hedges, not frequent either in Scotland or in England. *Fl.* July. ♃.—Two feet high. *Leaves* broadly linear-lanceolate, very hairy. *Cal.* valves unequal, lanceolato-acuminate, much nerved. *Ext. valve* of cor. linear-lanceolate, much nerved, scabrous, rarely hairy; *inner* one truncate, margins ciliate.

H. 2. B. *pinnátum*, Beauv. (*heath false Brome-grass*); spike erect, spikelets nearly cylindrical distichous hairy, awns shorter than the florets. *Lindl. Syn. p.* 297. *Festuca pinn. Engl. Fl. v. i. p.* 150. *Bromus pinn. Linn.*—*Engl. Bot. t.* 730.

Open fields and heathy places, in a chalky soil: in Yorkshire, Oxfordshire, and Kent.—*Fl.* July. ♃.—A very graceful plant.

47. Lólium. *Linn.* Darnel.

Cal. of one valve, solitary, many-flowered. *Cor.* of two *valves*, *ext.* awnless or with an awn below the extremity. Name, "quasi *dolium*, δολιον, quod dolosum sit vel adulterinum. Fit enim e corruptis Tritici ac Hordei seminibus." The ancients, as well as the moderns, attributed poisonous qualities to the *L. temulentum;* and even now it is believed in some countries, that the *Wheat* changes into *Darnel.*

H. 1. L. *perénne*, Linn. (*perennial Darnel or Rye-grass*); spikelets much longer than the cal., florets awnless linear-oblong compressed, root perennial. *Engl. Bot. t.* 315. *Hook. Scot. i. p.* 45. *Engl. Fl. v. i. p.* 173.

Way-sides, pastures and waste places, frequent. *Fl.* June, July. ♃.—One foot to two feet high. *Spike* with the general aspect of *Triticum repens*, sometimes from luxuriance, compound. *Florets* linear-oblong, nerved.—A most valuable grass for the agriculturist, and frequently employed with *clover* for artificial pasture and hay.

H. 2. L. *arvénse*, With. (*short-awned annual Darnel*); spikelets equal in length with the cal., florets with short soft (imperfect) awns, root annual. *Engl. Bot. t.* 1125. *Hook. Scot. i. p.* 45. *Engl. Fl. v. i. p.* 174.

Fields, with the following, of which it is now the general opinion that it is but a variety. *Fl.* July. ⊙.

3. L. *temuléntum*, Linn. (*bearded Darnel*); spikelets equal in length with the cal., florets as long as the rigid awns, root annual. *Engl. Bot. t.* 124. *Hook. Scot. i. p.* 45.

Corn-fields, not common in Scotland. *Fl.* July. ⊙.—Mr. Wilson finds this plant with an awn of such a dubious character, that it seems quite intermediate between the present and the preceding species.

48. Rottbollia. *Linn.* Hard-grass.

Cal. of 2 valves, *valves* unilateral, sometimes combined into one, 1—2 flowered. *Cor.* 2-valved, awnless, imbedded, as it were, in a thick *rachis.*—Name from *Rottboel*, a Professor of Botany at Copenhagen.

H. 1. R. *incurváta*, Linn. (*Sea Hard-grass*); spike cylindaceo-subulate, cal. 2-valved, valves united at the base. *Engl. Bot. t.* 760. *Hook. Scot. i. p.* 46. *Engl. Fl. v. i. p.* 175. *Ophiurus, Beauv. Lindl.*

β. spike filiform, nearly erect. *R. filiformis, Roth.*

Sea-shores; but not common. On the south-west and east of Scotland. β. near Aberlady, Scotland. *G. Don.* *Fl.* July, Aug. ⊙.—*Plant* from 2—6 or 8 inches high, more or less curved, especially in the curious spike.

49. Knáppia. *Sm.* Knappia.

Cal. single-flowered, of 2 truncated, nearly equal valves. *Cor.* of two unequal, hairy valves, obtuse.—Named in honour of *Mr. Knapp*, an English Botanist, and author of a work on British grasses.

H. 1. K. *agrostidéa*, Sm. (*early Knappia*).—*Engl. Bot. t.* 1127. *Engl. Fl. v. i. p.* 84. *Agrostis minima, Linn.*—*Mibora, Adans. Lindl.*—*Chamagrostis, Bork.*—*Sturmia, Hopp.*

Sandy pastures by the sea, rare. Essex, near the mouth of the Thames; Wales, and S.W. coast of Anglesea, frequent. *H. Davis. Fl.* March, April. ⊙.—A beautiful and minute grass, of which only one species is known. *Root* fibrous. *Stems* several from the same root. *Leaves* short, linear, rough, equal in length with their white, inflated *sheaths. Cal.* of 2, dorsally compressed, truncated, purplish *valves. Cor.* of 2, white, delicate, very hairy, jagged *valves*, the *outer one* much the largest and embracing the *inner. Styles* long, filiform, hairy. *Fruit* beautifully dotted.

†† *Flowers in unilateral spikes.*

50. SPARTÍNA. *Willd.* Cord-grass.

Spike compound. *Spikelets* unilateral. *Cal.* of 2 opposite, lanceolate, compressed, unequal, acuminate *valves*, one-flowered. *Cor.* of 2, compressed, rather unequal, lanceolate *valves. Styles* united half way up.—Name, derived from its similarity to the *Lygeum spartum*, or *Bastard Mat-weed. Esparto* is a name given to *Stipa tenacissima* by the Spaniards, who make ropes, &c. of it.

H. 1. S. *stricta*, Sm. (*twin-spiked Cord-grass*); spikes 2—3 erect with very smooth stalks, outer valves of the calyx smallest. *Engl. Fl. v. i. p.* 135. *Dactylis stricta, Engl. Bot. t.* 389.

Muddy salt marshes, on the east and south-east coasts of England. *Fl.* Aug. ♃.—A remarkably stiff, rigid plant, quite unlike any other native grass. *Stems* 6—8 inches, or a foot or more high. *Culms* concealed by the sheathing bases of the short pungent involute leaves.

51. CÝNODON. *Rich.* Dog's tooth-grass.

Spikes digitate or racemose: spikelets unilateral. *Cal.* 1-flowered, of 2 nearly equal, patent, boat-shaped valves. *Cor.* of two awnless valves; *ext.* boat-shaped, compressed. *Fruit* coated with the hardened *cor.*—Name from *κῦων, a dog*, and *ὀδους, a tooth.*

H. 1. C. *Dáctylon*, Pers. (*creeping Dog's-tooth-grass*); spikes digitate 3—5, cor. glabrous subciliated longer than the cal., with a beardless bristle at the base of the interior valve. *Br.*—*Engl. Fl. v. i. p.* 95. *Panicum Dactylon, Linn.*—*Engl. Bot. t.* 850.

Rare: on the sandy shores of Cornwall. *Fl.* July, Aug. ♃.

52. DIGITÁRIA. *Scop.* Finger-grass.

Spikes compound. *Spikelets* unilateral. *Cal.* 1-flowered, of 2—3 very unequal, close-pressed awnless *valves: outer* one very small. *Cor.* of 2, awnless *valves*, the *outer* one convex, embracing the flattened *inner* one. *Fruit* coated with the hardened *cor.*—Name from *digitus, a finger.*

1. D. *sanguinális*, Scop. (*hairy Cock's-foot or Finger-grass*); leaves and sheaths hairy, florets oblong glabrous their margins scabrous. *Engl. Fl. v. i. p.* 96.—*Panicum sanguinale, Linn.*—*Engl. Bot. t.* 849.

Rare in sandy cultivated fields: it formerly grew in Battersea Fields, near London. Other habitats, given in the British Floras for this plant, belong, in Mr. Borrer's opinion, to the next species. *Fl.* July, August. ⊙.—From a span to a foot high, branched from the base, erect or ascending. *Leaves* and *sheaths* hairy, the latter have small tubercles, from which the hairs spring. *Spikes* 3—5, digitated. *Spikelcts* secund, 2 together, appressed to the flattened rachis. *Cal. outer valves* very small: *inner* nearly equal, plane, of which the *external* one is oblong, ribbed and downy or slightly scabrous at the margin; ribs glabrous.

H. 2. D. *humifúsa*, Pers. (*glabrous Cock's-foot or Finger-grass*); leaves and sheaths glabrous, florets ovate pubescent.—*Syntherisma glabrum, Schrad. Germ. v. i. p.* 163. *t.* 3. *f.* 6.

Rare: on loose sand at Weybridge, Sussex; *Mr. Borrer;* who says that the Ipswich *D. sanguinalis* is this, and who thinks that the Norfolk and Suffolk stations, assigned to that plant in *Engl. Fl.*, probably belong to this. Once found at Dalbeth, near Glasgow, *Mr. Hopkirk. Fl.* July, Aug. ⊙.—Generally smaller and more humifuse than the preceding, of a purpler hue. *Leaves* and *sheaths* quite glabrous. *Spikes* fewer, 2—4 in Mr. Borrer's specimens. *Florets* more ovate, and more convex, outer of the two larger calycine valves purple, downy, and ribbed. *Richard in Pers. Syn.* appears to be the first to have discriminated this as a species, and Schrader has given an admirable description of it, and a figure of the flower.

ORD. III. TRIGYNIA. 3 *Styles.*

53. Móntia. *Linn.* Blinks.

Cal. of 2 leaves. *Cor.* of 5 irregular petals united at the base into one. *Caps.* 3-valved, 3-seeded.—*Nat. Ord.* Portulaceæ. *Juss.*—Name, in honour of *Joseph de Monti*, a Professor of Botany and Nat. History at Bologna.

H. 1. M. *fontána*, Linn. (*Water Blinks or Water-Chickweed.*) *Engl. Bot. t.* 1206. *Hook. Scot. i. p.* 47. *Engl. Fl. v. i. p.* 187.

Rills, springy and wet places. *Fl.* June, July. ⊙.—Whole plant succulent, varying considerably in size. *Stem* prostrate and rooting. *Leaves* small, opposite, spathulate. *Peduncles* nearly terminal, often forked. *Flowers* white, at first drooping. *Stam.* upon the corolla, short. *Germen* and *capsule* roundish. *Seeds* 3, subreniform, dotted.—The β. *major* of Willd. and De Cand., (*M. repens* of Gmel. Fl. Bad.) is not uncommon in Scotland, and is found in Anglesea by *Mr. Wilson.*

54. Holósteum. *Linn.* Jagged Chickweed.

Cal. of 5 leaves. *Petals* 5-toothed. *Caps.* 1-celled, opening at the extremity with six teeth. *Seeds* furrowed on one side, dotted. *Embryo* folded.—*Nat. Ord.* Caryophylleæ. *Juss.*—Name from ολος, *all*, and οστεον, *bone*, by antiphrasis, the texture being the very reverse, soft and delicate.

1. H. *umbellátum*, Linn. (*umbelliferous jagged Chickweed*); leaves elliptical ovate acute, flowers umbellate, peduncle pubescent viscid,

pedicels reflexed after flowering at length erect. *Engl. Bot. t.* 27. *Engl. Fl. v. i. p.* 187. *Cerastium umbellatum, Huds.—Hook. in Fl. Lond. N. Ser. t.* 13.

Rare, on old walls about Norwich and Bury. *Fl.* April. ⊙.—A singular and interesting plant, which I have incorrectly referred to *Cerastium* in the Fl. Lond. It is indeed the original *Holosteum* of Linnæus, and the other species that have been referred to it, will probably be found to belong to different genera.

55. POLYCÁRPON. *Linn.* All-seed.

Cal. of 5 leaves. *Pet.* 5, emarginate. *Stam.* 3—5. *Caps.* 1-celled, 3-valved, many-seeded. *Nat. Ord.* PARONYCHIEÆ. *St. Hil.*—Name from πολυ, *many*, and καρπος, *fruit ;* applied by the ancients to the *Polygonum aviculare*, to which the present genus is somewhat allied in appearance.

H. 1. P. *tetraphýllum*, Linn. (*four-leaved All-seed*) ; triandrous, petals notched, stem-leaves in fours, those of the branches opposite. *Engl. Bot. t.* 1031. *Engl. Fl. v. i. p.* 376.

Southern coasts of England, particularly Devonshire, Dorsetshire, and Portland Island. *Fl.* summer months. ⊙.

CLASS IV. TETRANDRIA.

(4 *Stamens, equal in height.*)

ORD. I. MONOGYNIA. 1 *Pistil.*

* *Perianth double. Cor. monopetalous, superior.*[1] *Seed* 1.—*Gen.* 1—3.

1. DÍPSACUS. *Linn.* Teasel.

Involucre many-leaved. *Cal.* double, *ext.* very minute, forming a thickened limb to the germen : *int.* cup-shaped, entire. *Receptacle* chaffy, spinous. *Fruit* angular, with 8 pores or depressed points, crowned with the double calyx. (*Flowers* densely capitate.) *Nat. Ord.* DIPSACEÆ. *Juss.*—Name from δεψαω, *to be thirsty ;* the upper connate leaves containing water in their hollows.

1. D. *Fullónum*, Linn. (*Fuller's Teasel*) ; leaves subconnate, scales of the receptacle hooked at the extremity, involucres spreading (reflexed *Sm.*). *Engl. Bot. t.* 2080. *Hook. Scot. i. p.* 49. *Engl. Fl. v. i. p.* 192.

Waste places and hedge-banks, but rare and scarcely wild. *Fl.* July, Aug. ♂.—Stem 4—5 feet high, very angular and prickly. *Leaves* large, oblong, or oblongo-lanceolate, obtusely and irregularly serrated, sometimes, especially the upper ones, connate. *Involucre* spreading, about as long as the head of flowers. *Flowers* in oval heads, pale purple or whitish.—Used in dressing cloth, for which purpose the hooked scales of the receptacle are admirably calculated. These hooks become obsolete by long cultivation in a poor soil, and there is every reason to believe that *D. Fullonum* is but a var. of *D. sylvestris.*

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[1] This group consists of plants of the *Nat. Ord.* DIPSACEÆ, on which see an excellent Memoir, published by Mr. Coulter, at Geneva, 1823. The outer calyx is called by that author an *involucellum.*

2. D. *sylvéstris*, Linn. (*wild Teasel*); leaves opposite rarely connate, scales of the receptacle strait at the extremity, involucres curved upward. *Engl. Bot. t.* 1032. *Hook. Scot. i. p.* 49. *Engl. Fl. v. i. p.* 193.

Road-sides and hedges, not rare in England: less frequent in Scotland. Inch Colm, near Edinb. *Maughan.* River-sides, about 2 miles from Ayr. *Mr. James Wilson. Fl.* July. ♂.

H. 3. D. *pilósus*, Linn. (*small Teasel*); leaves petiolate with a small leaflet at the base on each side, involucres shortly deflexed. *Engl. Bot. t.* 877. *Hook. Scot. i. p.* 49. *Engl. Fl. v. i. p.* 193.

Moist hedges, but not common. In several places in Norfolk and Suffolk. Rare in Scotland. *Lightfoot. Fl.* Aug. Sept. ♂.—*Stem* slender, 2—4 feet high, angular, rough with short reflexed prickles, longer and resembling bristles on the peduncles. *Leaves* ovato-acuminate, serrated, eared at the base. *Heads* of flowers rather small, round, hairy. *Scales* straight; *blossoms* white. *Anthers* white, much protruded. *Fruit* four-sided, with 2 depressed dots, according to Mr. Coulter, on each face in the upper part.

2. Knáutia. *Linn.* Knautia.

Involucre many-leaved. *Cal.* double; *ext.* minute: *int.* cup-shaped. *Fruit* compressed, with 4 pores on depressed points, upon a short stalk. *Nat. Ord.* Dipsaceæ. *Juss.*—Name, in honour of *Christopher Knaut*, a Botanist of Saxony, who flourished in the latter half of the 17th century.

H. 1. K. *arvénsis*, Coult. (*Field Knautia*); heads of many flowers, outer calyx with very minute teeth, inner with 8—16 somewhat awned cilia. *Coult.*—*Scabiosa arvensis, Linn.*—*Engl. Bot. t.* 659. *Hook. Scot. i. p.* 49. *Engl. Fl. v. i. p.* 195.

Pastures and corn-fields, frequent. *Fl.* July. ♃.—2—3 feet high. Radical *leaves* lanceolate, slightly serrate, hairy. Heads of *flowers* large, convex, lilac-purple: *outer florets* large, with their segments unequal, the lower ones very large, and forming a sort of ray around the head: *inner florets* with equal segments.

3. Scabiósa. *Linn.* Scabious.

Involucre many-leaved. *Cal.* double, *ext.* mostly membranaceous and plaited: *int.* with about 5 bristles. *Fruit* subcylindrical, crowned with the double *cal.* (Flowers densely capitate). *Nat. Ord.* Dipsaceæ *Juss.*—Name from *Scabies, leprosy*: an infusion or decoction o some of the species having formerly been employed in curing cutaneous diseases.

1. S. *succísa*, Linn. (*Devil's-bit Scabious*); corollas 4-cleft their segments equal, cauline leaves dentate, heads of flowers nearly globose. *Engl. Bot. t.* 878. *Hook. Scot. i. p.* 49. *Engl. Fl. v. i. p* 194.

Meadows and pastures, common. *Fl.* July, Aug. ♃.—*Root* as it were cut off abruptly, or bitten (*radix præmorsa*). *Stems* nearly simple. *Leaves* hairy, rather stiff; *radical ones* ovate, mostly petiolate, those of the stem oblong. *Flowers* purplish blue.

H. 2. S. *columbária*, Linn. (*small Scabious*); corollas 5-cleft radiating, stem hairy, radical leaves oblongo-ovate and crenate or lyrate, those of the stem pinnatifid with linear segments. *Engl. Bot. t.* 1311. *Hook. Scot. i. p.* 50. *Engl. Fl. v. i. p.* 195.

Pastures and waste places, most abundant in chalk countries: rare in Scotland: near Arbroath, Ayrshire, and with white fl. *G. Don.* Plentiful near Montrose, and at Blackford. *Mr. Murray. Fl.* July, August. ♃.—Scarcely a foot high, hairy. Lower *leaves* on rather long *footstalks;* cauline ones cut into narrow, linear, or setaceous, pinnæ. *Flowers* purplish blue. *Involucre* of narrow leaves, longer than the flowers. *Inner cal.* with 5 bristles.

** *Perianth double. Cor. monopetalous, superior. Seeds* 2.[1] (*leaves whorled*). *Gen.* 4—7.

4. Gálium. *Linn.* Bed-straw.

Cor. rotate, 4-cleft. *Fruit* a dry two-lobed, indehiscent *pericarp. Nat. Ord.* Stellatæ. Linn.—Name from γαλα, *milk:* the plant having been formerly employed to curdle milk.

* *Fruit glabrous. Flowers yellow.*

H. 1. G. *vérum*, Linn. (*yellow Bed-straw*); leaves about 8 in a whorl linear grooved above, flowers in dense panicles. *Engl. Bot. t.* 660. *Hook. Scot. i. p.* 50. *Engl. Fl. v. i. p.* 208.

Dry banks, sandy places and sea-shores, common. *Fl.* July, Aug. ♃.—Readily distinguished by its yellow *flowers*, and linear, deflexed *leaves.* Gerard tells us that the milk of the best Cheshire cheeses used to be coagulated with this plant. According to Lightfoot the Highlanders employ the roots,[2] and principally the bark of them, to dye a red colour; boiling them with the yarn and adding alum to fix the colour. In the Isle of Coll, one of the Hebrides, these roots are taken up in such quantities as by frequent digging to injure materially the plants of *Triticum junceum, Carex arenaria,* &c. among which they grow, and which are so useful in binding the sand of the shores. (*Maculloch*). The Highlanders employ the plant also as a Rennet to curdle milk, combined with the leaves of the stinging Nettle (*Urtica dioica*) and a little salt.

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[1] This little groupe belongs to the first division of the Rubiaceæ of *Juss.* Stellatæ, *Linn. Lindl.* In some of the Genera, especially in *Galium*, the *cal.* forms so small a rim or margin to the Germen as to be scarcely visible: the tubular part being incorporated with the germen.

[2] Curtis says these roots yield a better red than madder. The plant should be cultivated, and perhaps others of this natural group, all allied to the true *madder*, and the dyeing qualities of the root correctly ascertained.

2. G. *cruciátum*, Linn. (*Crosswort Bed-straw, Mug-wort*); leaves 4 in a whorl ovate hairy, flowers polygamous clustered lateral, peduncles 2-leaved. *Engl. Bot. t.* 143. *Hook. Scot. i. p.* 51. *Engl. Fl. v. i. p.* 199.

Hedge-banks and thickets, common. *Fl.* May, June. ♃.

** *Fruit glabrous. Flowers white.*

3. G. *palústre*, Linn. (*white Water Bed-straw*); leaves 4—6 in a whorl oblongo-lanceolate obtuse tapering at the base, and as well as the lax spreading branched stem, more or less rough. *Hook. Scot. i. p.* 51.

α. stem and leaves smoothish. *G. palustre, Engl. Bot. t.* 1857. *Engl. Fl. v. i. p.* 199.

β. nerves at the back and margins of the leaves, and angles of the stem, distinctly rough with mostly reflexed prickles. *G. Witheringii, Engl. Bot. t.* 2206. *Engl. Fl. v. i. p.* 200.

Sides of ditches, lakes and rivulets. *Fl.* July. ♃.—"The transition from the smooth to the rough state of this plant may be observed on the borders of pools, and it is only in very wet situations that it corresponds with the description in *Engl. Fl.* of *G. palustre.* In dry situations, especially by road sides (in Wales) where the earth has been recently disturbed (in the neighbourhood of marshes) it assumes the state of *G. Witheringii*, but is very luxuriant and branched. In marshes not liable to be overflowed, and in boggy ground, it is in every respect like that described in Engl. Fl. under *G. Witheringii.*" *Wilson MSS.* The plant turns blackish in drying: and the upper leaves are generally unequal in size.

4. G. *uliginósum*, Linn. (*rough Marsh Bed-straw*); leaves 6 in a whorl lanceolate mucronate their margins and the stem rough with reflexed prickles. *Engl. Bot. t.* 1972. *Hook. Scot. i. p.* 51. *Engl. Fl. v. i. p.* 201.

Wet meadows and sides of ditches. *Fl.* Aug. ♃.—Distinguished by the lanceolate *leaves*, tapering at the base and shortly acuminated at the points into a mucro. *Bristles* on the plant all reflexed.

5. G. *saxátile*, Linn. (*smooth Heath Bed-straw*); leaves 6 in a whorl obovate mucronate, stem very much branched prostrate smooth. *Engl. Bot. t.* 815. *Hook. Scot. i. p.* 51. *Engl. Fl. v. i. p.* 201.

Heathy places and hilly and mountainous pastures, abundant: in some places the ground being almost white with it during summer. *Fl.* June—Aug. ♃.—*Plant* small, turning almost black in drying. *Leaves* often rough at the margins, of a thickish and rather soft texture. *Fruit*, as Sir James Smith well observes, becoming reddish after the corollas fall, and then, when fertile, minutely granulated on the surface.

6. G. *eréctum*, Huds. (*upright Bed-straw*); leaves about 8 in a whorl lanceolate mucronate their margins rough with prickles pointing forward, panicle much branched, stem glabrous flaccid, segments of the corolla mucronato-acuminate. *Engl. Bot. t.* 2067. *Hook. Scot. i. p.* 51. *Engl. Fl. v. i. p.* 202.

β. Leaves downy on the underside.

Hedges and pastures, not common. In Norfolk :—Portslade, Sussex, and near Cambridge, *Borrer*. Portobello, near Edinburgh. *Maughan.*—β. near Plymouth. *Mr. G. Banks*. *Fl.* June, July. ♃.—"Differs from the *G. uliginosum* by the edges and the adjoining portion of the disk of the leaves above, bearing a double row of hooked prickles all pointing forward, in its larger size, stouter habit, glaucous hue, and larger, less obovate, *leaves*. The *flowers* are larger, far more numerous and crowded into dense, terminal, compound *panicles;* each segment of the corolla tipped with an awn-like point." *Sm.* in *Engl. Fl.*—Scarcely any genus requires illustration more than *Galium*. The present species is by Sprengel considered the same as *G. lucidum* of *Allioni*, and *G. rigidum. Vill.* Roemer and Schultes, again, refer to it *G. provinciale. Lam.*—Prof. Mertens refers it with certainty, upon the authority of a specimen received from Mr. Turner, to *G. lucidum*. Mr. Banks has sent me specimens, agreeing in every particular with the *Engl. Bot.* plant: except that the leaves are all minutely, but distinctly and thickly, downy on the underside.

7. G. *cinéreum*, All. (*grey spreading Bed-straw*) *;* "leaves 6—8 in a whorl linear bristle-pointed with marginal prickles all pointing forward, stem weak much branched, fruit smooth, corolla tapering." *Sm.—Engl. Fl. v. i. p.* 203. *G. diffusum, Don. in Hook. Scot. i. p.* 52. (according to Smith.)

Banks of the river Leith near Slateford, 3 m. from Edinburgh: *Don.* and near Kinnaird, Angus-shire. (*v. Fl. Scot.*), *G. Don.* *Fl.* Aug. ♃.—Of this I know nothing but from the notes of Mr. G. Don, which I published in *Fl. Scot.* and from the description of Smith, who says of it that it comes very near *G. erectum*, and that experience must prove how far its differences are constant.

8. G. *aristátum*, Linn. (*bearded Bed-straw*) *;* "leaves 6 in a whorl stalked lanceolate flat reticulated with veins, bristle-pointed with minute marginal prickles pointing forward, stem much branched spreading smooth, seeds smooth kidney-shaped separated, corolla taper-pointed." *Sm.—Engl. Fl. v. i. p.* 204.

In Angus-shire, but not common. *Mr. G. Don.* *Fl.* July, Aug. ♃.

H. 9. G. *Mollúgo*, Linn. (*great Hedge Bed-straw*) *;* leaves 8 in a whorl elliptical mucronate rough at the margin, flowers in loose spreading panicles, segments of the corolla mucronate. *Engl. Bot. t.* 1673. *Hook. Scot. i. p.* 53. *Engl. Fl. v. i. p.* 208.

Hedges and thickets; less frequent in Scotland. *Fl.* July, Aug. ♃.—*Stems* very long and straggling. *Prickles* on the margins of the *leaves* pointing forward. 4 rows of prickles on stem [illegible]

H. 10. G. *pusíllum*, Linn. (*least Mountain Bed-straw*) *;* "leaves 8 in a whorl linear-lanceolate hair-pointed entire somewhat hairy, panicles terminal forked, fruit very smooth." *Sm.—Engl. Bot. t.* 74. *Hook. Scot. i. p.* 52. *Engl. Fl. v. i. p.* 206.

Limestone hills, near Kendal and about Matlock, Derbyshire: and near the lake of Killarney, Ireland.—Pentland and Strathblane hills and lower rocks of Clova in Scotland. *G. and D. Don.* *Fl.* July, Aug. ♃.

—I have never been so fortunate as to see this plant in a good state, and foreign authors seem to be little, if at all, acquainted with it.

11. G. *parisiénse*, Linn. (*Wall Bed-straw*); leaves about 6 in a whorl lanceolated mucronated rough at the margins, peduncles axillary its branches divaricated slender subtrichotomous, stems slender rough.—*G. gracile, Mertens and Koch.*

α. Fruit hispid. *G. parisiense, Linn.—G. litigiosum, De Cand. Ic. Pl. Gall. p.* 8. *t.* 26. *G. gracile, Wallr.—G. gracile* α. *Mert. and Koch.*

β. Fruit glabrous, slightly tuberculated. *G. parisiense, Tenore.—G. anglicum, Huds.—Engl. Bot. t.* 384. *Engl. Fl. v. i. p.* 209. *G. gracile,* β. *Mertens and Koch.*

β. Walls and dry sandy soils, but rare: in Kent and various parts of the east and south-east of England, especially on old walls. *Fl.* June. ⊙.—On comparing this with the *G. parisiense* of continental authors, I think it will appear evident that it is but a glabrous fruited var. of it, such as is also found on the continent. The *G. parisiense* of Tenore, for example, has the fruit quite glabrous.

12. G. *saccharátum*, All. (*warty-fruited Bed-straw*); leaves 6 in a whorl lanceolate their margins rough with prickles pointing forward, peduncles axillary 3-flowered, fruit reflexed warted.—*G. verrucosum. Engl. Bot. t.* 2173. *Hook. Scot. i. p.* 52. *Engl. Fl. v. i. p.* 204.—*Valantia Aparine. Linn.*

Corn-fields rare. Discovered by *Mr. G. Don* in corn-fields in the Carse of Gowrie, Scotland. Near Malton, Yorkshire. *Mr. R. Miller. Fl.* June—Aug. ⊙.—*Prickles* of the *stem* reflexed. The two lateral flowers, on each peduncle, are sterile, and fall away, one from each side of the large warted *fruit*, which, together with the marginal prickles of the leaves pointing forwards, essentially distinguish this from *G. tricorne.*

H. 13. G. *tricórne*, With. (*rough-fruited Corn Bed-straw*); leaves about 8 in a whorl lanceolate their margins midrib and angles of the stems rough with reflexed prickles, peduncles axillary 3-flowered, fruit reflexed granulated. *Engl. Bot. t.* 1641. *Engl. Fl. v. i. p.* 206.

Dry chalky fields, in England: Isle of Thanet, in Surry and near Stamford, Lincolnshire. In Oxfordshire, Yorkshire, Gloucestershire, Norfolk, Suffolk (*Rev. G. R. Leathes in Herb. nostr.*) and the Isle of Wight. *Fl.* July. ⊙.

14. G. *spúrium*, Linn. (*smooth-fruited Corn Bed-straw*); leaves about 8 in a whorl their margins as well as stem rough with reflexed prickles, peduncles axillary many-flowered, fruit smooth spreading. *Engl. Bot. t.* 1871. *Hook. Scot. i. p.* 52. *Engl. Fl. v. i. p.* 206.

Corn-fields near Forfar, Scotland, rare. *G. Don. Fl.* July. ⊙.—Allied to the 2 last species in the short axillary *peduncles:* but in general habit coming so near the *G. Aparine*, that except by the glabrous *fruit*, it is scarcely to be distinguished from it. Sprengel asserts it to be the same.

*** *Fruit hispid.* Flowers white.

15. G. *boreále*, Linn. (*cross-leaved Bed-straw*); leaves 4 in a whorl lanceolate 3-nerved glabrous, stems erect, fruit muricated. *Engl. Bot. t.* 105. *Hook. Scot. i. p.* 53. *Engl. Fl. v. i. p.* 209.

Moist rocks, frequent in the north of England, Wales, and Ireland. *Fl.* June, July, ♃.—In very shaded places and clefts of rocks, the *stems* are brown, long, and straggling. *Flowers* numerous, crowded, white. *Bristles* of the *fruit* hooked.

16. G. *Aparíne*, Linn. (*Goose-grass or Cleavers*); leaves 6—8 in a whorl lanceolate hispid their margin midrib and angles of the stem very rough with reflexed bristles, peduncles axillary, stem weak, fruit hispid. *Engl. Bot. t.* 816. *Hook. Scot. i. p.* 53. *Engl. Fl. v. i. p.* 210.

Hedges, abundant. *Fl.* June, July. ⊙.—Habit of spec. 12, 13, 14, and, like them, annual. *Plant* straggling among bushes. *Flowers* few, or two or three short, simple *footstalks*, arising from the axils of the leaves. *Bristles* of the *fruit* hooked, which by this means catch hold of the coats of animals, and are widely dispersed. The *seeds* have been recommended as a substitute for *coffee.*

5. Rúbia. *Linn.* Madder.

Cor. rotate or campanulate, 3—5 cleft. *Fruit* a two-lobed *Berry.* —*Nat. Ord.* Stellatæ. *Linn.*—Name from *ruber*, red, from the red dye afforded by the species, especially the *Rubia tinctorum*, which produces the true *Madder* or *Turkey red* of commerce.

H. 1. R. *peregrína*, Linn. (*wild Madder*), leaves 4—6 in a whorl lanceolate persistent glossy, the margin and keel rough with reflexed prickles, flowers 5-cleft. *Engl. Bot. t.* 851. *Engl. Fl. v. i. p.* 211.

Stony and sandy ground, in the south-west of England. Anglesea. *Mr. Wilson.* Surely *Dr. Mitchell*, in *Linn. Corresp. v. ii. p.* 449. must be mistaken in saying that this is "*plentiful all over the sandy islands of the west of Scotland.*" *See Engl. Fl. v. i. p.* 211. *Fl.* June—Aug. ♃. Very nearly allied to *R. tinctorum;* from which, according to De Candolla, it is distinguished by its "firmer and harsher texture, its persistent *leaves*, its larger *flower*, always 5-cleft, with the lobes of the *corolla* broad and oval at their base, suddenly contracted into an acerose point." Again, Mr. Wilson justly remarks that the *corolla* is rather rotate than campanulate, (or funnel-shaped, as in *R. tinctorum*); the segments, after the escape of the pollen, spreading, with convex surfaces, concave in the newly-opened flowers.

6. Aspérula. *Linn.* Woodruff.

Cor. funnel-shaped. *Fruit* without any distinct margin to the calyx.—*Nat. Ord.* Stellatæ. *Linn.*—Name from *asper*, rough, owing to the roughness of some species of the genus.

H. 1. A. *odoráta*, Linn. (*sweet Woodruff*); leaves about 8 in a whorl lanceolate, flowers panicled on long stalks. *Engl. Bot. t.* 755. *Hook. Scot. i. p.* 50. *Engl. Fl. v. i. p.* 196.

Woods and shady places, plentiful. *Fl.* May, June. ♃.—About 6 inches high, erect. *Flowers* white. Whole *plant* very fragrant, like *Anthoxanthum*, especially when in the act of drying.

H. 2. A. *Cynánchica*, Linn. (*Small Woodruff, Squinancy-wort*);

leaves linear 4 in a whorl, upper whorls have 2 opposite leaves reduced to bractea. *Engl. Bot. t.* 33. *Engl. Fl. v. i. p.* 198.

Lime rocks S. Wales Warm banks, especially in chalk countries. Not found in Scotland ~~or Wales~~. *Fl.* June, July. ♃.—*Flowers* generally lilac. One pair in the whorl of the uppermost leaves is reduced to small lanceolate *stipules*, exhibiting beautifully the real character of the stipules of the *Rubiaceæ* in general, of which the *Stellatæ* are considered by most authors to constitute a group.

A. arvensis - Field Woodruff. Appendix 7.

7. SHERÁRDIA. *Linn.* Sherardia or Field Madder.

Cor. funnel-shaped. *Fruit* crowned with the *cal.*—*Nat. Ord.* STELLATÆ. *Linn.*—Named in honour of *James Sherard*, an English Botanist and Patron of Botany, whose fine garden at Eltham in Kent gave rise to the famous "*Hortus Elthamensis*" of Dillenius.

H. 1. S. *arvénsis*, Linn. (*blue Sherardia*); leaves about 6 in a whorl, flowers terminal sessile umbellate. *Engl. Bot. t.* 891. *Hook. Scot. i. p.* 50. *Engl. Fl. v. i. p.* 196.

Corn-fields, especially in a light gravelly soil, frequent. *Fl.* June—Aug. ⊙.—A small, slender, branched and spreading plant. *Leaves* obovato-lanceolate, acute, their margins rough, upper ones 7—8, forming an involucre to a small sessile umbel of pale blue *flowers*. *Cal.* of 4 segments, two opposite ones bifid; these bifid ones correspond to the line where the fruit separates into two one-seeded portions, each of which is crowned with three teeth, one, the single tooth or segment of the *cal.* the two others, each half of a double one.

*** *Perianth double. Cor. monopetalous, inferior. Seeds 2 or many. Gen.* 8—10.

8. EXÁCUM. *Linn.* Gentianella.

Cal. 4-cleft. *Cor.* 4-cleft, salver-shaped, marcescent, the *tube* swelling. *Anthers* opening longitudinally. *Stigma* entire. *Capsule* 1-celled, 2-valved. *Seeds* attached to two sutural receptacles, which at length separate with the opening of the two-valved *capsule.*—*Nat. Ord.* GENTIANEÆ. *Juss.*—Name εξ, *out*, and αγω, *to conduct*, anciently applied to the *Erythrea Centaurium*, a genus allied to this, and which was supposed to have the property of ejecting poison from the stomach.

H. 1. E. *filifórme*, Sm. (*least Gentianella*); leaves linear-lanceolate sessile, stem dichotomous slender, peduncles elongated. *Engl. Bot. t.* 235. *Engl. Fl. v. i. p.* 212. *Hook. in Fl. Lond. t.* 86.—*Gentiana filiformis, Linn.*

Sandy turf-bogs; in the extreme south and south-west of England. In Ireland it is found near Cork, upon Dursey Island. *Fl.* July. ⊙.—A small slender and graceful plant, with yellow flowers, differing from *Gentiana* in the number of stamens and divisions to the cal. and corolla.

9. PLANTAGO. *Linn.* Plantain.

Cor. 4-cleft, the segments reflexed. *Stam.* very long. *Caps.* of

2 cells, 2 or many-seeded, bursting all round transversely.—*Nat. Ord.* PLANTAGINEÆ. *Juss.*—Name of doubtful origin.—All the species are mucilaginous and astringent.

H. 1. P. *májor*, Linn. (*greater Plantain*); leaves broadly ovate mostly on longish footstalks, scape rounded, spikes long cylindrical, dissepiment of the capsule plane, each cell many-seeded. *Engl. Bot. t.* 1558. *Hook. Scot. p.* 53. *Engl. Fl. v. i. p.* 213.

Pastures and road-sides, frequent. *Fl.* June, July. ♃.—*Leaves* all radical, more or less spreading, with 7 nerves, entire or toothed, glabrous or pubescent. *Petioles* varying in length, sometimes as long as the leaf, ribbed. *Spike* dense. At the base of each flower is a concave bractea. *Cal.* of 4, minute *leaflets.* *Caps.* ovate, 6 or 8 *seeds* in each cell.—*Spike* sometimes leafy, with the leaves disposed in a pyramidal form. *Hopk.*

H. 2. P. *média*, Linn. (*hoary Plantain*); leaves ovate sessile or tapering into short and broad footstalks, scape rounded, spike cylindrical, dissepiment of the capsule plane, each cell 1-seeded. *Engl. Bot. t.* 1559. *Hook. Scot. i. p.* 53. *Engl. Fl. v. i. p.* 214.

Meadows and pastures, less frequent in Scotland. *Fl.* June, July. ♃.—*Stamens* long, with dark purple filaments. *Spike* shorter than in *P. major*, and more silvery from the shining scariose corollas: but a more essential difference is in the *cells* of the *capsule*, which are but 1-seeded.

H. 3. P. *lanceoláta*, Linn. (*Ribwort Plantain*); leaves lanceolate, scape angular, spike ovate, dissepiment of the capsule plane, each cell 1-seeded. *Engl. Bot. t.* 175. *Hook. Scot. i. p.* 54. *Engl. Fl. v. i. p.* 214.

Meadows and pastures, often too abundant. *Fl.* June, July. ♃.—The *leaves* and *scape* are observed by Mr. S. Murray to yield 4 strong fibres. The spike has the bracteas sometimes, by luxuriance, converted into leaves, and sometimes a new scape and spike grow out horizontally from among the bracteæ. Lightfoot mentions a var. with globular heads: this is probably the same as I have found at a considerable elevation upon the mountains of Scotland with short *leaves*, long and slender *scapes*, hairy and scarcely angular, with small dark brown almost globular *heads*; the *bracteæ* more or less hairy. This is scarcely different from the *P. montana* of authors, *P. quinquenervia* of Schleicher's Catalogue.

H. 4. P. *marítima*, Linn. (*Sea-side Plantain*); leaves linear grooved fleshy woolly at their base, scape rounded spike cylindrical, dissepiment of the capsule plane, each cell 1-seeded. *Engl. Bot. t.* 175. *Hook. Scot. i. p.* 54. *Engl. Fl. v. i. p.* 215.

β. *major*; leaves almost plane inclining to lanceolate toothed glabrous, scape densely hairy.

γ. minor; leaves linear-lanceolate densely hairy as well as the scape.

Grassy pastures by the sea-side, frequently near the margin of fresh water lakes and on the *bases* of mountains sloping down to them, as by Loch-Lomond, and on the *summits* of the highest mountains. β. On the island of Cumrae, among rocks. γ. Among rocks by the House of Skail, Pomona, Orkney, *G. Anderson, Esq.* *Fl.* June—Sept. ♃.—Varying much in size and in the breadth and hairiness of the leaves and scapes: sometimes the leaves are almost filiform, often lanceolate; in the curious var. found by Mr. Anderson, clothed with short, dense hairs;—always very succulent.

H. 5. P. *Corónopus*, Linn. (*Buck's-horn Plantain*); leaves linear pinnatifid, scape rounded, dissepiment of the capsule with 4 angles (thus forming 4 cells), 1 seed in each cell. *Engl. Bot. t.* 892. *Hook. Scot. i. p.* 54. *Engl. Fl. v. i. p.* 216.

Gravelly sterile soils, inland and upon the coast. *Fl.* June, July. ⊙.—*Leaves* mostly spreading, very variable in size and pubescence, pinnatifid; segments often toothed or again divided. *Scape* hairy. *Spike* mostly cylindrical. In small plants growing on Staffa, I have seen specimens with the spike ovate, composed of not more than 7 or 8 flowers; whilst the leaves and scapes were quite hispid.

10. CENTÚNCULUS. *Linn.* Chaffweed.

Cor. tubular 4-partite. *Stam.* short. *Caps.* of 1 cell, many-seeded, bursting all round transversely.—*Nat. Ord.* PRIMULACEÆ. *Vent.*—Name, it appears, anciently given to the *Pimpernel*, a genus allied to this, and derived according to Théis from *Cento*, a covering, because it was a little weed that covered the cultivated fields.

C. *mínimus*, Linn. (*Small Chaffweed or Bastard Pimpernel*); flowers sessile, corolla without glands at the base. Sm.—*Engl. Bot. t.* 531. *Hook. Scot. i. p.* 54. *Engl. Fl. v. i. p.* 217.

Moist sandy or gravelly places, about London, in Kent, Bedfordshire, Norfolk, Suffolk, the south of Ireland, and lowlands of Scotland: not a frequent; but probably often overlooked on account of its small size. *Fl.* June, July. ⊙.—*Plant* 1—2 inches high, more or less branched. *Leaves* alternate, ovate, glabrous. *Flowers* extremely minute, sessile, axillary, solitary. *Cor.* pale rose colour, withering upon the capsule.

acious var.

**** *Perianth double. Cor. of 4 petals.—Gen.* 11, 12.

11. EPIMÉDIUM. *Linn.* Barrenwort.

Cal. of 4 leaves, caducous. *Pet.* inferior, with an inflated *nectary* on the upper side. Pod 1-celled, 2-valved, many-seeded.—*Nat. Ord.* BERBERIDEÆ. *Vent.*—Name of obscure origin; applied by Dioscorides to a plant, which some suppose to be the *Botrychium Lunaria*, and which grew plentifully in Media.

H. 1. E. *alpínum*, Linn. (*alpine Barrenwort*); root-leaves none, stem leaf twice ternate. *Engl. Bot. t.* 438. *Hook. Scot. i. p.* 220. *Engl. Fl. v. i. p.* 220.

Subalpine woods, doubtful if really a native or an outcast of gardens. Bingley woods, Yorkshire. On Carrock fell and Skiddaw, Cumberland. Near Glasgow and Edinburgh. (*Fl. Scot*). *Fl.* May. ♃.—*Stems* several from the same root, erect, simple, bearing each a triternate leaf: base of the petiole swollen: *leaflets* heart-shaped, extremely delicate, ciliated at the margin, hairy beneath, serrated, *lateral ones* inequilateral. *Panicle* shorter than the leaf, springing from the swollen base of the petiole. *Flowers* reddish; *nectary* white, resembling an inflated membrane. *Anthers* very curious, of 2 *cells*, opening by two *valves* which spring back upwards, and suffer the pollen to escape.—Another species of the genus has been found on the North-West coast of America, having 6 stamens.

12. Córnus. *Linn.* Cornel.

Cal. of 4 teeth. *Petals* without a nectary, superior. *Nut* of the drupe with 2 cells and 2 seeds. Name from *Cornu*, a *Horn*, owing to the hard nature of the wood. Nat. Ord. Caprifoliaceæ. Juss.

H, 1. C. *sanguinea*, Linn. (*wild Cornel or Dogwood*); arborescent, branches strait, leaves opposite ovate green on both sides, cymes destitute of involucre. *Engl. Bot. t.* 249. *Hook. Scot. i. p.* 55. *Engl. Fl. v. i. p.* 221.

Woods and thickets, particularly on a chalk or limestone soil; scarcely wild in Scotland. *Fl.* June, July. ♄.—Five to 6 feet high. *Bark* in the older branches dark red, as are the *leaves* before they fall; these are strongly nerved, entire, slightly hairy beneath. *Cymes* of numerous white *flowers* at the ends of the branches.

H. 2. C. *Suécica*, Linn. (*dwarf Cornel*); herbaceous, leaves all opposite ovate glabrous, flowers few umbellate surrounded by a 4-leaved petaloid involucre, and springing from the axil of the forked extremity of the stem. *Engl. Bot. t.* 310. *Hook. Scot. i. p.* 55. *Engl. Fl. v. i. p.* 221.

Alpine pastures in Northumberland and Scotland: especially in turf bogs in the Highland mountains. *Fl.* July, Aug. ♃.—*Root* creeping. *Stems* about 6 inches high. *Umbel* terminal, from the axil of 2 young branches, which do not exceed the general flowerstalk in height, till the fruit is ripe. *Drupes* red, said by the Highlanders to create appetite, and hence called, *Lus-a-chraois*, plant of gluttony. (*Lightf.*)

***** *Perianth single.—Gen.* 13—16.

13. Pariétaria. *Linn.* Wall-Pellitory.

Perianth 4-fid, inferior. *Filaments* of the *stam.* at first incurved, then expanding with an elastic force. *Fruit* 1-seeded, enclosed by the enlarged Perianth. (One or more of the central florets without stamens.)—*Nat. Ord.* Urticeæ. *Juss.*—Name from *paries*, a wall, from the species frequently growing on old walls.

L. 1. P. *officinális*, Linn. (*common Pellitory of the wall*); leaves ovato-lanceolate, 3-nerved above the base "involucre in two portions, each of about 7 segments, in each portion are 3 flowers with one fertile one between them." *Wilson.*—*Engl. Bot. t.* 597. *Hook. Scot. i. p.* 56. *Engl. Fl. v. i. p.* 222.

Old walls and waste places, among rubbish. *Fl.* during the summer months. ♃.—*Stems* often procumbent upon the wall, reddish, pubescent. *Leaves* alternate. *Flowers* small, hairy, purplish, clustered in the axils of the leaves. "*Involucre* in two portions, of about 7 segments each, and between them is placed a fertile flower, whose perianth is entire, closely surrounding the pistil. In each portion of the involucre are 3 flowers apparently fertile," (*Wilson*), but of which the central one has only a pistil. The lateral ones have stamens and pistil. *Filaments* jointed, in which peculiarity exists the elastic property by which the pollen is so copiously discharged. This is remarkably the case in a hot summer's day. *Fruit* black, shining. *Pericarp* closely investing the seed.—For a full account of the curious structure of the flowers of this plant, see Curtis in *Flora Londinensis.*

14. ALCHEMÍLLA. *Linn.* Lady's Mantle.[1]

Perianth inferior, 8-cleft, the 4 alternate and outer segments the smallest. *Fruit* 1 or 2 seeded, surrounded by the persistent perianth.—*Nat. Ord.* ROSACEÆ. *Juss.*—Name from the Arabic *àlkêmelyeh, alchemy*, from its pretended alchemical virtues.

H. 1. A. *vulgáris*, Linn. (*common Lady's Mantle*); leaves plaited many-lobed serrated. *Engl. Bot. t.* 597. *Hook. Scot. i. p.* 56. *Engl. Fl. v. i. p.* 223.

β. *minor*, leaves very pubescent. *A. hybrida. Pers.*

Alpine pastures, abundant. *Fl.* June, July. ♃.—One foot high, or more. *Radical leaves* large, on long footstalks, those of the stem with connate toothed stipules, upper ones sessile and very small, *lobes* 6—9. *Flowers* in many rather lax, corymbose, terminal clusters, yellow green. *Germens* 1—2. *Seeds* 1—2. *Style* lateral.

H. 2. A. *alpína*, Linn. (*alpine Lady's Mantle*); leaves digitate serrated, white and satiny beneath. *Engl. Bot. t.* 244. *Hook. Scot. i. p.* 56. *Engl. Fl. v. i. p.* 224.

Mountains in the north of England, North Wales, and especially Scotland. *Fl.* July—Aug. ♃.—One of the most elegant of our native plants. *Inflorescence* similar to that of *A. vulgaris;* but the leaves are very different, and the leaflets are beautifully silky on the underside.

H. 3. A. *arvénsis*, Sm. (*Field Lady's Mantle or Parsley Piert*); leaves trifid pubescent, lobes deeply cut, flowers sessile axillary. *Engl. Bot. t.* 1011. *Hook. Scot. i. p.* 56. *Engl. Fl. v. i. p.* 224. *A. Aphanes. Willd. Aphanes arvensis. Linn.*

Fields and gravelly soils, and on wall tops, where there is any covering of soil. *Fl.* May—July. ⊙.—*Stems* branched, leafy, 4—5 inches long, frequently prostrate. *Leaves* alternate: *stipules* large. *Stam.* varying in number. *Germens* 1 or 2.

15. ISNÁRDIA. *Linn.* Isnardia.

Cal. 4-cleft, superior. *Petals* 4, or wanting. *Stigma* capitate. *Capsule* obovate, quadrangular, 4-valved, 4-celled, many-seeded, crowned with the *calyx.*—*Nat. Ord.* ~~SALIC~~ARIÆ. *Juss.*—Name, ONA after *Antoine d'Isnard*, a Botanist and Professor at Paris in the beginning of the last century.—As the Genus is now characterized here and by Dr. Candolle it contains many species of the old *Ludwigia.*

1. I. *palústris*, Linn. (*Marsh Isnardia*); stem procumbent rooting glabrous, leaves opposite ovate acute stalked, flowers axillary solitary sessile apetalous. *DC.*—*Engl. Fl. v.* 4. *App. p.* 264. *Hook. in Engl. Bot. Suppl. t.* 2593.

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[1] Mantle of *Our Lady* (the *Virgin Mary*), therefore not "*Ladies' Mantle*," as written by many authors.

Very rare. In a pool at Buxtead, Sussex. *Mr. Borrer. Fl.* July. ⊙.—A most interesting addition to our British Flora, discovered in 1827. It is frequent on the continent of Europe, in North America and the temperate parts of Asia.

16. Sanguisórba. *Linn.* Burnet.

Perianth 4-lobed, superior, coloured, with 4 scales on bracteæ at the base. *Fruit* 1 or 2 seeded, surrounded by the persistent base only of the Perianth.—*Nat. Ord.* Rosaceæ. *Juss.*—Name from *sanguis, blood,* and *sorbeo,* to take up or *absorb;* from the supposed vulnerary properties of the plant.

1. S. *officinális,* Linn. (*great Burnet*); glabrous, spikes ovate, stamens about as long as the perianth. *Engl. Bot. t.* 1312. *Hook. Scot. i. p.* 54. *Engl. Fl. v. i. p.* 218.

Low moist meadows and pastures, on a calcareous soil, chiefly in the north of England. (*Sm.*); more rare in the lowlands of Scotland. *Fl.* June, July. ♃.—One foot to two feet high, branching upward. *Leaves* pinnate with a terminal leaflet; the rest of the leaflets opposite, all ovate, somewhat cordate at the base; glabrous, strongly serrated, petioled: at the base of each pair of petioles are two small toothed appendages in the larger leaves; these are wanting in some specimens. *Heads of flowers* much crowded, dark purple. *Limb* of the *perianth* in 4 ovate segments, its tube enveloping the germen and having at its base 4, ciliated scales or bracteas (*calyx* of many authors). *Seed* 1, rarely 2.—This and the preceding genus are allied to the plants in the Class *Icosandria,* (*Rosaceæ.*)

2. S. *média,* Linn. (*oblong Burnet*); spikes cylindrical. *Engl. Fl. v. i. p.* 219.

In pastures, in the west of Scotland. *G. Don, in Engl. Fl. Fl.* July. ♃.—" Taller and larger than the foregoing, with a much longer and truly cylindrical *spike,* of rather pale flowers. Mr. Don, who sent it, had scarcely an idea of its being more than a variety." *Sm.*

ORD. II. DIGYNIA. 2 *Styles.*

17. Buffónia. *Sauv.* Buffonia.

Cal. of 4 leaves. *Cor.* of 4 entire petals. *Caps.* flattened, 1-celled, 2-valved, 2-seeded.—*Nat. Ord.* Caryophylleæ. *Juss.*—Name, given by Sauvages in honour of the celebrated *Buffon,* " who had indeed very slender pretensions to a botanical honour; a circumstance supposed to have been indicated by Linnæus in the specific name *tenuifolia.*" (*Sm.*)

1. B. *ánnua,* DC. (*annual Buffonia*); stem loosely panicled from the base, branches spreading short firm, striæ on the calyx strait parallel, capsules scarcely so long as the cal., leaves subulate spreading at the base. *DC.*—*B. tenuifolia, Engl. Bot. t.* 1313. (scarcely of Linn.). *Engl. Fl. v. i. p.* 225.

Said to have been found in Plukenet's and Dillenius' time, both about

Boston in Lincolnshire; and upon Hounslow Heath: but no one has found it since. Sir Joseph Banks was persuaded that, in Lincolnshire, the *Bupleurum tenuissimum* had been mistaken for it. *Fl.* June. ⊙. (*Sm.*) —Linnæus, *B. tenuifolia* is perennial, and is the *B. perennis* of De Cand.

(*See* Alchemilla *vulgaris* and *arvensis* in Ord. 2; Some Gentianæ and Cuscuta in Cl. V.)

ORD. III. TETRAGYNIA. 4 *Styles.*

18. ILEX. *Linn.* Holly.

Cal. 4—5-toothed. *Cor.* rotate, 4—5-cleft. *Stigmas* 4, sessile. *Berry* spherical, including 4, 1-seeded *nuts.* (Some flowers destitute of pistil).—*Nat. Ord.* CELASTRINEÆ. *Br.*—Name from *ac, sharp*, in Celtic, according to Théis, but this is a very forced derivation.

1. I. *Aquifólium*, Linn. (*common Holly*); leaves ovate acute shining waved with spinous teeth, peduncles axillary short many-flowered, flowers subumbellate. *Engl. Bot. t.* 496. *Hook. Scot. i. p.* 57. *Engl. Fl. v. i. p.* 227.

Frequent in hedges and woods, especially in a light or gravelly soil. *Fl.* May, June. ♄.—A small evergreen tree of great beauty, with smooth grayish *bark.* *Leaves* alternate, deep shining green, very rigid, the upper ones quite entire, the lower ones generally edged with strong sharp spines. This difference in the foliage has not escaped the notice of our Poet Southey;

> "O reader! hast thou ever stood to see
> The holly tree?
> The eye that contemplates it well perceives
> Its glossy leaves;
> Order'd by an Intelligence so wise,
> As might confound the Atheist's sophistries.
>
> Below, a circling fence, its leaves are seen
> Wrinkled and keen;
> No grazing cattle through their prickly round
> Can reach to wound;
> But, as they grow where nothing is to fear,
> Smooth and unarmed the pointless leaves appear."

The flowers are somewhat umbellate, and spring from the axils of the leaves. *Cal.* slightly hairy, small. *Cor.* white. *Berries* bright scarlet. Excellent for fences, as it bears clipping. The wood is hard and white and presents a beautiful surface; whence it is much employed for Turners' work, for making drawings upon, for knife-handles, &c. Of the bark, bird-lime is made. With the leaves and berries our houses and churches are adorned at Christmas, a relic probably of Druidism, during the prevalence of which Dr. Chandler tells us "houses were decked with them, that the sylvan spirits might repair thither and remain unnipped by frost and cold winds, until a milder season had renewed the foliage of their darling abodes."—Innumerable varieties of this plant are reared by gardeners, mainly depending upon the variegation of their leaves and spines, and the colour of the berries.—The *Holly* (*Creil Thionn*, in Gaelic), is the badge of the Clan *Drummond*, in Scotland.

19. POTAMOGÉTON. *Linn.* Pond-weed.

Flowers sessile upon a *spike* or *spadix*, which issues from a sheathing *bractea* or *spatha*. *Perianth* single, of 4 scales. *Anthers* sessile, opposite the scales of the Perianth. *Pistils* 4: which become 4 small *nuts*; *Embryo* curved.—*Nat. Ord.* ALISMACEÆ. *Decand.*—Name, from ποταμος, a *river*, and γειτων, a *neighbour*. All the species grow in the water, and often present as beautiful an appearance in clear streams and ponds, as the *Fuci* do in the ocean. They protect the spawn of fish, and harbour innumerable aquatic insects, affording food by their roots and seeds to aquatic birds.—Chamisso and Schlechtendal have well illustrated this Genus. *See Linnæa, v. ii. p.* 159.

* *Leaves all opposite: stipules none.*

H. 1. P. *dénsus*, Linn. (*opposite-leaved Pond-weed*); leaves all opposite amplexicaul ovate acuminate or lanceolate. *Engl. Bot. t.* 397. *Hook. Scot. i. p.* 58. *Engl. Fl. v. i. p.* 230.

Ditches, frequent. *Fl.* June, July. ♃.—*Peduncles* short. *Head* of *flowers* small, rounded. *Leaves* keeled below, middle nerve or rib of many longitudinal cells, with 2 and sometimes 3 lateral parallel veins on each side, the inner one the strongest.

** *Leaves alternate, all submersed, with adnate stipules.*

H. 2. P. *pectinátus*, Linn. (*Fennel-leaved Pondweed*); leaves distichous setaceous single-nerved sheathing by means of their adnate stipules, spike interrupted. *Engl. Bot. t.* 323. *Hook. Scot. i. p.* 59. *Engl. Fl. v. i. p.* 236.—*P. marinus, Linn.*

Rivers, lakes, and salt-water ditches. *Fl.* July. ♃.—General habit not much unlike that of *Ruppia maritima*. Chamisso and Schlechtendal make 2 species of this; the one having small fruit or nuts, not keeled at the back, (their *P. filiformis*): the other having large fruit, twice the size of the former, keeled at the back (their *P. pectinatus*). I scarcely know whether these characters are sufficient to constitute species. If they are, our plants, at least all that I have seen in fruit, and there is no difference in the foliage, will belong to their *P. filiformis*. The latter I have from Gouan, marked *P. marinus*. Probably it is the one alluded to by Dillenius as having "*large heads of flowers*" when growing in salt water: (*see Engl. Fl. p.* 237): and should be sought for by those who live in the neighbourhood of salt marshes.

*** *Leaves alternate, all linear, submersed: stipules free.*

H. 3. P. *pusíllus*, Linn. (*small Pond-weed*); leaves narrow linear 3—5 nerved with obscure connecting veins, peduncles elongated. *Engl. Bot. p.* 215. *Hook. Scot. i. p.* 59. *Engl. Fl. v. i. p.* 235.

β. *major*, stem more compressed, leaves broader, spike somewhat interrupted.—*P. compressus, Linn.—Engl. Bot. t.* 418. *Hook. Scot. i. p.* 58. *Engl. Fl. v. i. p.* 233.

Ditches and still waters. *Fl.* July. ♃.—The *stem* is here, as in all of this division, more or less compressed. The *leaves* are more or less acute; the *spikes* oblong, compact or a little interrupted. I quite agree with Chamisso and Schlechtendal who unite the *P. compressus* with *P. pusillus.*

H 4. P. *gramíneus*, Linn. (*grassy Pond-weed*); leaves broadly linear obtuse three-nerved, with few and obscure connecting veins, peduncle scarcely longer than the oblongo-oval spike. *Engl. Bot. t.* 2253. *Hook. Scot. i. p.* 58. *Engl. Fl. v. i. p.* 235.—*P. obtusifolius, Mert. and Koch.—Cham. et Schlecht. in Linn. v. ii. p.* 178. *t.* 4. *f.* 8.

Ponds and ditches: Deptford, Norwich, Yorkshire, (*Engl. Fl.*) Lancashire. *Mr. Wilson. Fl.* July. ♃.—Nearly allied to the last, but stouter, darker coloured and with short peduncles, scarcely longer than the stipule of the leaf from the axil of which they spring. The middle nerve or rib is accompanied by many parallel oblong reticulations, as is well observed by Smith.

5. P. *acútifolius*, Link, (*sharp-leaved Pond-weed*); leaves linear acuminate, with 3 principal and numerous close parallel intermediate nerves occupying the whole surface, spikes oval compact about equal in length with the short peduncle. *Hook. in Engl. Bot. Suppl. t.* 2609.

Rare? Hitherto only found in marsh-ditches at Amberley, Henfield, and Lewes, Sussex, *Mr. Borrer. Fl.* July. ♃.—The numerous closely-placed parallel nerves well distinguish this and the following species from their congeners.

6. P. *zostéræfolius*, Schum. (*Grass-wrack-like Pond-weed*); leaves broadly linear acute with 3 principal and numerous close parallel intermediate nerves occupying the whole surface, spikes cylindrical upon long peduncles. *Reichenb. Iconogr. t.* 175. *f.* 308. *Cham. et Schlecht. in Linnæa, v. i. p.* 182. *t.* 4. *f.* 10.—*P. cuspidatus, Schrad.—Engl. Fl. v. i. p.* 234.

Rare? Rivulet at Hovingham, Yorkshire. *Mr. Teesdale.* Lakes of Rescobie and Forfar. *G. Don.* I have it from the latter station, gathered by *Mr. Drummond. Fl.* July. ♃.—Larger than the last; with peduncles 3—4 inches long, and spikes cylindrical, an inch long.

**** *Leaves alternate, ovate or lanceolate, all submersed: stipules free.*

H 7. P. *críspus*, Linn. (*curled Pond-weed*); leaves lanceolate waved and serrated 3-nerved, fruit beaked. *Engl. Bot. t.* 1012. *Hook. Scot. i. p.* 58. *Engl. Fl. v. i. p.* 233.

Ditches and rivers, frequent. *Fl.* June, July. ♃.

8. P. *perfoliátus*, Linn. (*perfoliate Pond-weed*); leaves cordato-

ovate amplexicaul 7-nerved with smaller intermediate nerves. *Engl. Bot. t.* 168. *Hook. Scot. i. p.* 58. *Engl. Fl. v. i. p.* 229.

Ditches and lakes, frequent. *Fl.* July. ♃.—*Peduncles* rather short, thick. *Spikes* oblongo-ovate.

H. 9. P. *lúcens*, Linn. (*shining Pond-weed*); leaves elliptic-lanceolate mucronate with several opposite pairs of parallel nerves springing from the midrib connected by reticulations, spike cylindrical many-flowered. *Engl. Bot. t.* 376. *Hook. Scot. i. p.* 58. *Engl. Fl. v. i. p.* 231.

Lakes, pools, and streams, abundant. *Fl.* June, July. ♃.—The largest of our species, and very beautiful in the nervation of its leaves. Chamisso and Schlechtendal include this in a division of the Genus which has sometimes floating and coriaceous leaves (*folia accessoria*), they change the name to *P. Proteus*, and consider the *P. heterophyllus* a variety of it. To me they appear distinct; but aquatic plants of all kinds are extremely liable to vary. *

***** *Leaves alternate, upper ones floating, broader than the rest: stipules free.*

10. P. *heterophýllus*, Schreb. (*various-leaved Pond-weed*); "upper leaves elliptical stalked floating slightly coriaceous, lower ones lanceolate membranaceous sessile, flower-stalks swelling upwards." *Engl. Bot. t.* 1285. *Hook. Scot. i. p.* 57.

Pools and ditches, in various parts of the country. *Fl.* June, July. ♃. *Mr. Wilson* finds this sometimes without floating leaves, when it seems intermediate between *P. lanceolatus* and *P. rufescens*.

11. P. *lanceolátus*, Sm. (*lanceolate Pond-weed*); submersed leaves lanceolate tapering at the base membranaceous with about 5—7 nerves and transverse veins, near the middle nerve are small chain-like reticulations, floating leaves elliptic-lanceolate subcoriaceous many-nerved petiolate, peduncle about as long as the leaves, spikes elliptical.

β. floating leaves none.—*P. lanceolatus*, *Engl. Bot. t.* 1985. *Hook. Scot. i. p.* 58. *Engl. Fl. v. i. p.* 232.

Pools and ditches. α. and β. growing together, in pools in Anglesea: *Mr. Wilson*; β. Anglesea, *Rev. H. Davis*. Angus-shire, *G. Don*. Kincardineshire, *Mr. Maughan*. In the Losie, by Elgin, *Rev. G. Gordon*. *Fl.* July. ♃.—This plant has been very little understood till Mr. Wilson found it growing in a small rivulet in Anglesea, having a moderately swift stream. "*Floating leaves* are *always* found when the current is slow. The chain-like reticulations are only distinguishable near the mid-rib on the submersed leaves, the floating leaves being elegantly overspread by them." (*Wilson in litt.*) This is quite correct, and the portion of chain-like reticulations increases gradually upwards. The difficulty is now to distinguish this plant from the preceding, than which, however, it is much smaller and more delicate in all its parts. Sir James Smith considered the *P. setaceus* of Linn. and Huds. and *Fl. Brit.* to be probably the same as this.

H. 12. P. *rufèscens*, Schrad. (*reddish Pond-weed*); submersed

H. * P. prælongus. Appen. 8.

leaves lanceolate membranaceous many-nerved with connecting veins and many linear reticulations at the midrib, floating ones subcoriaceous on long stalks. *Cham. et Schlecht. in Linnæa, v. ii. p.* 210.—*P. fluitans, Engl. Bot. t.* 1286. *Hook. Scot. i. p.* 57. *Engl. Fl. v. i. p.* 230. (*not of Roth.*)

Ditches and slow streams in many parts of England. Anglesea. *Mr. Wilson.* Near Glasgow, and Forfar. (*Fl. Scot.*) In the Gaddie, at Premnay, Aberdeenshire. *Rev. G. Gordon. Fl.* July. ♃.—"This does, in some situations, much resemble *P. lucens.* The coriaceous floating leaves are nearly as acute as the lower ones, differing only in their firmer texture and in being stalked, the ribs, shape, and size being much the same in both. The lateral ribs or nerves are by no means separate at the base of the leaf, but arise from various parts of the central rib; some of them one-third the length of the leaf from its base; they are from 6—7 in number on each side, two of them more evident than the rest: flower-stalk not thickened upwards." (*Wilson in litt.*) It is remarkable for its reddish olive colour, and is perhaps better known by its general aspect, size, and colour, than by any character that can be applied to it. To me the above species with floating leaves seem gradually to pass into one another.

13. P. *oblóngus*, Viv. (*blunt-fruited broad-leaved Pond-weed*); "floating leaves coriaceous, lower ones submersed or all floating, (leafless petioles none) nuts minute blunt at the back." *Cham. et Schlecht. in Linnæa, v. ii. p.* 214. *t.* 6. *f.* 19. "*Viviani Fragm. Fl. It. i. t.* 2."

Ditches near Horsfield. *Mr. D. Turner. Fl.* July. ♃.—I introduce this on the authority of specimens received by Chamisso and Schlechtendal from Mr. Turner, never having seen the plant. The fruit is described and figured as quite rounded and obtuse on the back, whereas in the following species it is decidedly acute.

14. 14. P. *nátans*, Linn. (*sharp-fruited broad-leaved Pond-weed*); lower leaves linear submembranaceous or wanting, upper elliptical coriaceous floating, all on long stalks many-nerved distinctly cellular, fruit carinated. *Engl. Bot. t.* 1822. *Hook. Scot. i. p.* 27. *Engl. Fl. v. i. p.* 228.

Stagnant waters and slow streams, frequent. *Fl.* June, July. ♃.—Very variable, in the size of the plant, and in the shape of its floating leaves, which are more or less elongated, sometimes almost lanceolate, obtuse at the base or decurrent with the footstalks. The *lower leaves* appear to me to differ from the submersed leaves of all the others (except the last, perhaps,) in having their substance composed of the same small, but distinct, cells or reticulations as the floating ones. These submersed leaves are frequently wholly wanting, especially when the plant grows in very shallow water. Chamisso and Schlechtendal describe the lower petioles as leafless, but this assuredly is not always the case.

20. Rúppia. *Linn.* Ruppia.

Flowers 2, on a spadix arising from the sheathing bases of the leaves, which perform the office of a *spatha. Perianth* 0. *Drupes*

4, pedicellate, their *nuts* one-seeded.—*Nat. Ord.* ALISMACEÆ. *Rich.*—Named after *Henry Bernard Ruppius*, author of *Flora Jenensis*, in 1718.

H. 1. R. *marítima*, Linn. (*Sea Ruppia*); *Engl. Bot. t.* 136. *Hook. in Fl. Lond. t.* 50. *Hook. Scot. i. p.* 59. *Engl. Fl. v. i. p.* 237.

Salt-water pools, and ditches. *Fl.* July, Aug. ♃.—*Stems* slender, filiform, flexuose, branched, leafy. *Leaves* linear-setaceous, with *sheaths* sometimes narrow and small, at other times large and inflated. *Spadix* at first very short, included in the *sheaths* or *spatha*, with 2 green *flowers*, one above another on opposite sides, and quite destitute of perianth. *Anthers* large, sessile, subquadrate, bursting horizontally, 1-celled. Mertens and Koch say that each pair is in fact the 2 cells of 1 anther, and that there are, in reality, but 2, sessile *stamens*. *Pollen*, a tube with 3 globules, 1 in the middle and 1 at each end of the tube. *Germens* resembling 4 minute tubercles in the centre between the anthers. After flowering, the *spadix* lengthens remarkably, to the height of 5 or 6 inches or more, and becomes spirally twisted, as if to bring the fruit to the level of the water, in which the *flowers* are always immersed: but Mr. Wilson observes the fruit to be submerged in every stage. The *germens* now swell and their base is elongated into a footstalk, as the fruit ripens, one or two inches long. Each then becomes an oblique, ovate, acuminated *drupe*. This *drupe* is sometimes more beaked than at other times, and the sheaths of the leaves are sometimes but little dilated; then the plant becomes *R. rostellata* of Koch, and of Reichenbach in his *Iconog. t.* 174. *f.* 306. This indeed is the more common state of the plant with us. I have only seen the plant with such large sheaths as are figured for the true *R. maritima Linn.* in Reichenb. *Iconog. t.* 174. *f.* 307. in specimens from the south of Europe. Yet that author quotes my figures in Flora Lond. as admirably characteristic of his *maritima*.

21. SAGÍNA. *Linn.* Pearl-wort.

Cal. of 4 leaves. *Petals* 4, (shorter than the calyx.) *Capsule* of 1 cell, 4 valves.—*Nat. Ord.* CARYOPHYLLEÆ. *Juss.*—Name signifying *meat which fattens*, but which is little applicable to any of the minute plants belonging to this genus.

H. 1. S. *procúmbens*, Linn. (*procumbent Pearl-wort*); perennial glabrous, stems procumbent, leaves shortly mucronate, petals much shorter than the calyx. *Engl. Bot. t.* 880. *Hook. Scot. i. p.* 59. *Engl. Fl. v. i. p.* 238.

Waste places, and dry pastures, frequent. *Fl.* May—Aug. ♃.—*Stems* spreading, 2—4 inches long, in alpine situations growing amongst *Spergula subulata*, from which it is with difficulty distinguished: and often sending out roots from different parts of the stem at the insertion of the leaves, and these throwing up new plants. *Leaves* linear-subulate, connate, membranous at the margins at the base, tipped with a short pellucid point or mucro. *Peduncles* solitary, axillary and terminal, about an inch long. *Flowers* at first drooping,

H. 2. S. *apétala*, Linn. (*annual small-flowered Pearl-wort*); annual, stems slightly hairy erect or ascending, leaves aristate fringed, petals much smaller than the calyx. *Engl. Bot. t.* 881. *Hook. Scot. i. p.* 60. *Engl. Fl. v. i. p.* 240.

Dry gravelly places, on walls, &c. frequent, and sometimes growing upon the sea-shore with the following species. *Fl.* May, June. ⊙.—Slenderer than the last, smaller and annual. *Leaves* narrower, more bristle-pointed, more glaucous and slightly hairy at the margins, sometimes glabrous. *Stems* also hairy. *Petals* always present, according to Mr. W. Wilson, obcordate, or wedge-shaped and truncated.

H. 3. S. *marítima*, Don, (*Sea Pearl-wort*)*;* annual, glabrous, stems erect or procumbent only at the base, leaves fleshy obtuse, petals none, calyx rather longer than the capsule. *Don's Hort. Sic. Br. n.* 155. *Engl. Bot. t.* 2195. *Hook. in Fl. Lond. t.* 115. (*N. S.*). *Sagina stricta, Fries.—Svensk. Bot. t.* 562. *f.* 2.

Sea-coast of Scotland not unfrequent, and on Ben Nevis, *G. Don.* Montrose, *Mr. Arnott.* First, I believe, detected in Ireland by *Mr. R. Brown.* Durham, *Mr. Winch.* Anglesea, Warrington, Liverpool, Isle of Mann, &c. *Mr. W. Wilson.* Frequent on the coast of Suffolk. *Fl.* May, Aug. ⊙.—A very distinct and well marked species, with a reddish or purplish tinge, especially on the stems and calyces. Quite glabrous. *Petals* altogether wanting. *Cal.* blunt, longer than the capsule. *Leaves* without any apiculus, fleshy, "rounded at the back," (*Wilson*).

22. MŒNCHIA. *Ehrh.* Mœnchia

Cal. of 4 leaves. *Petals* 4 (as long as the cal.) *Caps.* of one cell, opening with 8 teeth at the extremity.—*Nat. Ord.* CARYOPHYLLEÆ. *Juss.*—Name given in compliment to *Conrad Mœnch*, Professor of Botany at Hesse Cassel.

1. M. *erécta*, Sm. (*upright Mœnchia*).—*Engl. Fl. v. i. p.* 241. *M. glauca, Pers.—Hook. Scot. i. p.* 60.—*Sagina erecta, Linn.—Engl. Bot. t.* 609.

Pastures in a gravelly soil. *Fl.* May. ⊙.—Stem 2—4 inches high, erect, or at the base a little reclining, glabrous as well as the *leaves*, which are opposite, linear-lanceolate, acute, rigid, glaucous. *Cal. leaves* large, acuminate, white and membranous at the margin. *Pet.* lanceolate, entire, as long as the calyx. *Capsule* as in *Cerastium.*

23. TILLÆA. *Linn.* Tillæa.

Cal. 3—4-partite. *Pet.* 3, 4. *Caps.* 3 or 4, two-seeded.—*Nat. Ord.* CRASSULACEÆ. *De Cand.*—Name, after *Michael Angelo Tilli*, an Italian Botanist, who wrote, in 1723, a catalogue of the plants in the Medical Garden of Pisa.

1. T. *muscósa*, Linn. (*Mossy Tillæa*)*;* stems branched and decumbent at the base, flowers axillary sessile mostly 3-cleft. *Engl. Bot. t.* 116. *Engl. Fl. v. i. p.* 242.

On moist barren sandy heaths, in various parts of England, not found in Scotland. A troublesome weed in gravel walks in some parts of Norfolk and near London. *Fl.* May, June. ⊙—A minute succulent plant, scarcely 2 inches high, allied to *Sedum:* with small reddish, opposite, oblong, blunt leaves. *Cal. leaves* mostly 3, bristle-pointed. *Petals* very small, almost subulate, white, or tipped with rose-colour.

24. Radíola. *Gmel.* Flax-seed.

Cal. of 4 leaves united to their middle, and mostly 3-cleft. *Petals* 4. *Caps.* of 8 cells and 8 valves.—*Nat. Ord.* Lineæ. *De Cand.*—Name from *radius*, a *ray*, I presume in consequence of the ray-like segments of the calyx.

H. 1. R. *millegrána*, Sm. (*Thyme-leaved Flax-seed*).—*Engl. Bot. t.* 890. *Hook. Scot. i. p.* 60. *Engl. Fl. v. i. p.* 243.—*R. linoides, Gmel.*—*De Cand.*—*Linum Radiola, Linn.*

Moist gravelly and boggy soils in many places. *Fl.* July, Aug. ⊙.—A very minute plant, 1—2 inches high, repeatedly dichotomous. *Leaves* distant, ovate, entire, glabrous, under a high power of the microscope appearing dotted. *Flowers* axillary and terminal, stalked, solitary, on short peduncles. *Cal.* segments united so as to form a monophyllous many-toothed calyx.

(See *Cerastium tetrandrum* in Decand. Trig.).

CLASS V. PENTANDRIA. 5 *Stamens.*

ORD. I. MONOGYNIA. 1 *Style.* 64.

* *Perianth double. Cor. monopetalous. Germen deeply* 4*-lobed. Fruit with* 4 (*or fewer by imperfection*) *apparently naked seeds. Nat. Ord.* Boragineæ. *De Cand.* (Asperifoliæ, *Linn.*).—Gen. 1—10.

† *Throat of the corolla naked.*—Gen. 1—3.

1. Échium. *Linn.* Viper's Bugloss.

Cor. irregular, its *throat* dilated, open and naked. *Stigma* deeply cloven.—Name from εχις, a *Viper;* because this, or some allied plant, was supposed to be an effectual remedy against the bite of that animal.

H. 1. E. *vulgáre*, Linn. (*common Viper's Bugloss*); stem herbaceous simple hispid with tubercles, leaves linear-lanceolate hispid, flowers in lateral spikes, stamens longer than the corolla. *Engl. Bot. t.* 181. *Hook. Scot. i. p.* 70. *Engl. Fl. v. i. p.* 268.

On old walls, fields, and waste grounds, especially in a sandy or gravelly soil. *Fl.* June, July. ♂.—Two to three feet high. *Root leaves* spreading, petioled. *Spikes* of *flowers* lateral, secund, recurved, forming in fact one long compound spike or raceme. *Corolla* very beautiful, at first reddish purple, then brilliant blue. At Duncansby, Caithness, I have seen it with white flowers, and the Rev. Prof. Henslow finds it so at Cobham, Kent. *Echium italicum* is not now considered a British plant.

* 2. Pulmonária. *Linn.* Lungwort.

Cal. with 5 angles, 5-cleft. *Cor.* funnel-shaped, its throat naked. —Name from *Pulmo*, the *lungs*, from the use formerly made of this

*. Echium violaceum. Appen. 9.

and other BORAGINEÆ in pulmonary affections. In the present instance, the spotted leaves, resembling the lungs, were the principal recommendation. according to the doctrine of "Signatures."

H. 1. P. *officinális*, Linn. (*common Lungwort*); leaves scabrous, radical ones ovato-cordate petiolate, upper ones of the stem sessile ovate. *Engl. Bot. t.* 118. (*excluding the root-leaves, which belong to the next species.*) *Hook. Scot. i. p.* 69. *Engl. Fl. v. i. p.* 261.

Woods and thickets, but rare. Durham, Bedfordshire, more frequent in Hampshire.—Near Edinburgh and Glasgow: but scarcely wild. *Fl.* May. ♃.—About 1 foot high. *Stem leaves* all more or less ovate, lower ones petiolate, upper ones sessile; all with short hairs and, frequently, spotted. *Flowers* purple.

2. P. *angustifólia*, Linn. (*narrow-leaved Lungwort*); leaves scabrous, radical ones petiolate, upper ones sessile, all lanceolate. *Engl. Bot. t.* 1628. *Engl. Fl. v. i. p.* 262.

Woods and thickets rare. Isle of Wight, and New Forest, Hampshire; and in Flintshire. *Fl.* May, June. ♃.—Much taller than the preceding and very different in the shape of its foliage, which is seldom spotted.

3. LITHOSPÉRMUM. *Linn.* Gromwell.

Cal. in 5 deep segments. *Cor.* funnel-shaped, its orifice naked. —Name from λιθος, a *stone*, and σπερμα, a *seed*; from its shining, very hard seeds or nuts. The English, Gromwell, has the same origin in the Celtic: *graun*, a *seed*, and *mil*, a *stone*.

1. L. *officinále*, Linn. (*common Gromwell, Grey Mill or Grey Millet*); stem erect very much branched, leaves broadly lanceolate acute nerved, rough above, hairy beneath, tube of the corolla as long as the calyx, nuts smooth. *Engl. Bot. t.* 134. *Hook. Scot. i. p.* 68. *Engl. Fl. v. i. p.* 254.

Dry, waste and uncultivated places, and among rubbish: more rare in Scotland. ♃.—1 to 1½ foot high. *Fl.* pale yellow. *Nuts* whitish brown, highly polished; seldom more than 2 or 3 ripening in each calyx. My friend Captain Le Hunte has submitted these seeds or nuts to analysis, and obtained the following results. The stony *shells* of 60 seeds weighed upwards of 7 grains. Heated to redness, these 7 grains were reduced to 3, of which 4-10ths of a grain were pure *silica*. There was also a considerable quantity of sulphate of lime and iron.

2. L. *arvénse*, Linn. (*Corn Gromwell or Bastard Alkanet*); stem erect branched, leaves lanceolate acute hairy, calyx a little shorter than the corolla, its segments patent when containing the ripe wrinkled nuts. *Engl. Bot. t.* 123. *Hook. Scot. i. p.* 68.

Corn-fields and waste ground. *Fl.* May, June. ⊙.—*Corollas* white. *Calycine segments* thrice as long as the fruit.

3. L. *purpuro-cærúleum*, Linn. (*creeping or purple Gromwell*); barren stems prostrate, leaves lanceolate acute, corolla much longer than the calyx. *Engl. Bot. t.* 117. *Engl. Fl. v. i. p.* 256.

Thickets in a chalky soil, rare. Near Denbigh, in Wales; and Taunton, Somersetshire; Marychurch, Devon; Davent wood and Greenhithe, in Kent; Carswell Bay, Glamorganshire. *Fl.* June, July. ♃.—Distinguished from the 2 preceding species by its large and bright blue flowers.

A, 4. L. *marítimum*, Lehm. (*sea-side Gromwell*); stems procumbent branched, leaves rough with callous dots ovate, upper ones lanceolate, all fleshy and glaucous, nuts smooth. *Hook. Scot. i. p.* 68. *Engl. Fl. v. i. p.* 256. *Pulmonaria maritima, Linn.*—*Engl. Bot. t.* 368.

Sea-coast among sand or loose stones, rare, and only in the north of England: Wales, *Mr. W. Wilson:* plentiful in the north and west of Scotland. Between Portran and Skerries, Ireland, *Mr. J. T. Mackay. Fl.* May, June. ♃.—This is quite a northern plant, extending to the arctic regions: and in habit is *sui generis.* Lower *leaves* on footstalks and acute, upper ones sessile. *Flowers* somewhat racemed of a beautiful purplish blue: tube of the *cor.* short. Whole plant very glaucous, and, when the bloom is rubbed off, rough callous points are seen upon the surface, which become white and almost stony in drying, when the rest of the plant is nearly black. Mr. Stewart Murray has observed that the flavour of the plant resembles that of *oysters.*

†† *Throat of the corolla more or less closed with scales.*—Gen. 4—10.

4. SÝMPHYTUM. *Linn.* Comfrey.

Cal. 5-cleft. *Cor.* swollen upwards, its throat closed with connivent subulate scales.—Name from *συμφυω*, to *unite:* from its supposed healing qualities.

1. S. *officinále*, Linn. (*common Comfrey*); stem winged above, leaves ovato-lanceolate attenuate at the base and very decurrent. *Engl. Bot. t.* 817. *Hook. Scot. i. p.* 69. *Engl. Fl. v. i. p.* 263.

Banks of rivers and watery places, frequent. *Fl.* May, June. ♃.—Two to three feet high, branched above. *Root-leaves* ovate, petiolated. *Racemes* in pairs, secund, drooping. *Corollas* large, yellowish white, often purple.

2. S. *tuberósum*, Linn. (*tuberous-rooted Comfrey*); stem simple, leaves ovato-oblong attenuated at the base, upper ones only slightly decurrent. *Engl. Bot. t.* 1502. *Hook. Scot. i. p.* 69. *Engl. Fl. v. i. p.* 263.

Shady woods and river banks, frequent in Scotland, particularly in the lowlands: rare in England. Durham, *Mr. Robson. Fl.* June, July. ♃.—Resembling the last, but very distinct. Upper *leaves*, from which the peduncles spring, generally in pairs, large, ovato-lanceolate, a little decurrent; whereas those of *S. officinale* are very narrow, and run down into winged appendages to the stem.

5. BORÁGO. *Linn.* Borage.

Cal. 5-cleft. *Cor.* rotate, having its mouth closed with 5, obtuse and emarginate teeth.—Name from *Cor, heart,*[1] and *ago, to bring:* thence corrupted into *Borago*, or as the French spell it, *Borrago.*

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[1] Hence the old adage;
"I *Borage*, always bring Courage."

H. 1. B. *officinális*, Linn. (*common Borage*); lower leaves obovate attenuated at the base, segments of the corolla ovate acute spreading. *Engl. Bot. t.* 36. *Hook. Scot. i. p.* 70. *Engl. Fl. v. i. p.* 264.

Among rubbish and waste ground; but scarcely indigenous. *Fl.* June, July. ♂.—Whole plant very hispid. *Stem-leaves* petiolate and eared at the base; uppermost ones sessile. *Cor.* large, brilliant blue, with very prominent *stamens.* The supposed invigorating qualities of this plant, which gave rise to the name, are now discredited. It forms an ingredient, with wine, water, lemon, and sugar in a favourite English drink called a *cool tankard.*

6. Lycópsis. *Linn.* Bugloss.

Cal. 5-cleft. *Corolla* funnel-shaped with a curved *tube*, the mouth closed with convex, connivent scales. *Nuts* concave at the base.—Name from λυκος a *wolf*, and οψις, a *face*: from a fancied resemblance in the gaping flower to the head of a wolf.

H. 1. L. *arvénsis*, Linn. (*small Bugloss*); leaves lanceolate repando-denticulate very hispid, calyx erect while in flower. *Engl. Bot. t.* 938. *Hook. Scot. i. p.* 70. *Engl. Fl. v. i. p.* 267.—*Anchusa arvensis, Lehm.*

Corn-fields and hedge-banks, frequent. *Fl.* June, July. ⊙.—Whole plant very hispid; hairs or bristles seated on a white, callous tubercle. *Lower leaves* lengthened into a petiole, *upper ones* sessile semiamplexicaul. *Racemes* leafy. *Flowers* small, bright blue, differing from those of *Anchusa* in the curvature of the tube.

7. Anchúsa. *Linn.* Alkanet.

Cal. 5-cleft or 5-partite. *Cor.* funnel-shaped, *tube* straight, its mouth closed with convex, connivent scales. *Nuts* concave at the base.—Name from αγχουσα, *paint.* The roots of one species, *A. tinctoria*, yield a red dye which has been used in former times to stain the face.

1. A. *officinális*, Linn. (*common Alkanet*); leaves oblongo-lanceolate, spikes crowded unilateral, bracteas ovato-lanceolate as long as the calyx. *Engl. Bot. t.* 662. *Engl. Fl. v. i. p.* 258.

Waste ground, rare, perhaps not indigenous. On the Links at Hartley Pans, Northumberland. It is said to have been found at Kilsyth and Arnbrae, and at Addington, 8 miles from Glasgow. *Fl.* June, July. ♃.—1—2 feet high, rough and hispid. *Cor.* deep purple, the segments of the *limb* rather narrow.

H, 2. A. *sempervírens*, Linn. (*evergreen Alkanet*); leaves ovate, lower ones upon long stalks, peduncles axillary, flowers subcapitate accompanied by two leaves. *Engl. Bot. t.* 45. *Hook. Scot. i. p.* 68. *Engl. Fl. v. i. p.* 258.

Waste ground, among ruins and by road-sides, in many places both in England and Scotland: but often, I fear, the outcast of a garden. *Fl.* May, June. ♃.—*Flowers* of a beautiful blue. The shape of the *corolla* is, as Sir James Smith observes, rather salver than funnel-shaped, and thus is with difficulty distinguishable from *Myosotis.* Daily experience teaches us that the more natural the families, the greater is the difficulty of framing decided marks of distinction in the genera.

8. MYOSÓTIS. *Linn.* Scorpion-grass.

Cal. 5-cleft. *Cor.* salver-shaped, the lobes obtuse, the mouth half closed with short rounded valves. *Nuts* perforated at the base.—Name from μυς, υος, a *mouse*, and ους, οτος, an *ear;* from the shape of the leaves.

For the specific characters, synonyms and observations on this genus, I am indebted to my valued friend, W. Borrer, Esq.

1. M. *palústris*, "Kiphoff," (*great Water Scorpion-grass or Forget-me-not*)*;* fruit smooth; calyx with straight appressed bristles, when in fruit campanulate open shorter than the divergent pedicels, limb of the corolla flat, longer than the tube, pubescence of the stem spreading (or wanting.) *Engl. Bot. t.* 1973. *Hook. Scot. i. p.* 67. (*including M. cæspitosa.*) *Reichenb. in Sturm, cum ic. Hook. in Fl. Lond. ed.* 2. *cum ic. Engl. Fl. v. i. p.* 249.—*M. scorpioides palustris, Linn. Sp. Pl. v. i. p.* 188. *Smith Fl. Brit. v. i. p.* 212.—*M. scorpioides, Curt. Fl. Lond. fasc.* 3. *p.* 13.

Ditches and sides of rivers, abundant *Fl.* during the summer months, ♃.—A very beautiful, though common plant, and considered to be the emblem of friendship in almost every part of Europe. About 1 foot high. *Flowers* among the largest of our species, bright blue with a yellow eye, and a small white ray at the base of each segment.—Mertens and Koch in their *Flora of Germany*, and after them Lejeune and Courtois, cite *M. laxiflora* and *M. strigulosa* of Reich. as varieties of *M. palustris.* The figure of the former, in Sturm, shows a much shorter calyx, and appressed hairs on the stem, such as are found on *M. cæspitosa.*—Perhaps *M. repens*, Don, may be specifically distinguished by the deeply divided calyx (which I pointed out long ago to Sir James Smith), and the copious pubescence of that part. Its racemes are not always, although very often, leafy. Its synonyms are

M. répens, Don. MSS. " *Reichenb. in Sturm, cum ic.*—*M. palustris.* β. *Hook. Scot. i. p.* 67.—*M. palustris.* δ. *Mert. and Koch, Germ v ii. p.* 42. This is found in moist situations in Scotland by Mr. G. and D. Don, and by Mr. Backhouse[1] in the higher parts of Yorkshire.

2. M. *cæspitósa*, Schultz, (*tufted Water Scorpion-grass*)*;* fruit smooth; calyx with straight appressed bristles, when in fruit campanulate open shorter than the divergent pedicels, limb of the corolla concave equalling the tube, pubescence of the stem appressed. *Reichenb. in Sturm, cum ic. Spreng. Syst. Veget. v. i. p.* 557. *Engl. Fl. v. i. p.* 250. *Mertens' and Koch, Germ. v. ii. p.* 242.—*M. lingulata, Lehm. Asperif. p.* 110.

Common in watery places, both on clay and bog. *Fl.* May, June. ⊙. or ♂. (♃. or ♂. Sm).—*Root* fibrous not creeping, annual or biennial. *Stem* throwing out fibres from the lower joints. *Calyx* sparingly sprinkled with appressed, white bristles, cleft more deeply than in *M. palustris*, perhaps less than in *M. repens*, Don. *Corolla* varying in size, but usually not much exceeding the calyx.—Lehman gives *M. lingulata* as a plant with which he was but imperfectly acquainted, and which he expected Schultz to publish with that name in the *Suppl.* to his *Fl. Starg.* It appears, however, in that work with the less appropriate appellation of *M. cæspitosa*. Fries had previously (*Fl. Halland.* in 1827,) called it *M. maritima;* but in his later works he has adopted the name *lingulata*.[1]

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[1] Mr. Backhouse observes to me that the bracteæ among the pedicels are constant; the laciniæ of the calyx narrower and shorter than in *M. palustris*, full half as long as the calyx, and the whole plant smaller. The calyx is nerved. It flowers earlier by two months in the higher parts of Yorkshire, than *M. palustris* does in the lower. H.

H. 3. M. *alpéstris*, Schmidt, (*Rock Scorpion-grass*); fruit smooth; calyx with straight and a few curved bristles deeply 5-cleft, when in fruit campanulate straight shorter than the slightly spreading pedicels, limb of the corolla flat longer than the tube, root-leaves on long stalks. *Lehm. Asperif. p.* 86. *Hook. Scot. i. p.* 66. *Reichenb. in Sturm, cum ic.? Hook. in Fl. Lond. N. S. t.* 145. *Mert. and Koch, Germ. v. ii. p.* 44.—*M. rupicola, Engl. Bot. t.* 2559.—*M. suaveolens, Waldst. and Kit.*—*Willd. En. p.* 176. *Reichenb. in Sturm, cum ic.*—*M. alpina, Don, Herb. Brit. n.* 205.—*M. sylvatica. β. Fries, p.* 64.

Highland mountains, at a great elevation. But I am not sure that it is found upon any, except of the Breadalbane range, extending as far as Schechallion. *Fl.* July, Aug. ♃.—Four to 6 inches or even a foot high, with patent *leaves*. *Lower leaves* on very long footstalks. Nothing can exceed the beauty of the large blue *flowers*, which are at first so compact as to be almost capitate, then lengthened into *racemes*. Austrian specimens have rather a larger proportion of curved bristles on the calyx than our British ones. Fries doubts if the synonyms of Mertens and Koch belong to the same species, because they, as Lehman had done before, refer *M. suaveolens*, W. and K. to it. Of that plant I have seen no authentic specimens; but the figure of it in Sturm agrees better with our species, than that named *alpestris* does. Lehman reduces to *M. alpestris*, also, the *M. lithospermifolia*, Horn; but the sample in our herbarium has more the habit and leaves of *M. cæspitosa*, although the calyx most resembles *M. alpestris*.

4. M. *sylvática*, Hoffm. (*upright Wood Scorpion grass*); fruit smooth; calyx with spreading uncinate bristles deeply 5-cleft, when in fruit ovate (closed) shorter than the divergent pedicels, limb of the corolla flat longer than the tube, root-leaves on short dilated stalks. *Lehm. Asperif. p.* 85. *Hook. Fl. Scot. i. p.* 66. *Reichen. in Sturm. cum ic. Mert. and Koch, v. ii. p.* 43. *M. scorpioides γ. Huds. Angl. p.* 78. *Fl. Brit. v. i. p.* 213.

In dry shady places; chiefly in the North of England and Lowlands of Scotland: Essex and Kent, *Dillenius*. Holt, Norfolk, *Rev. R. B. Francis*. *Fl.* June, July, ♃.—Various authors and cultivators pronounce this plant perennial, (Fries says "perennans," Wahlenberg "subperennans,") whilst the following species is indubitably annual: between which and the present individual I can point out no other distinctive characters, more satisfactory than the somewhat more deeply divided calyx of *M. sylvatica*, its shorter and less remarkably hooked bristles, the broader and flatter corolla, and the greater size of the whole plant.

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[1] In the useful *Enum. Pl. Germ. et Helv. of* Steudel and Hochstetten, *M. cæspitosa* of Schultz is considered the same with *laxiflora* of Reichenb. and *M. repens* of Don is doubtfully quoted under *M. lingulata* of Schultz. Again in the *Fl. Germ.* of Bluff and Fingerhuth, *M. laxiflora* of Reichenb., *M. repens* of Reichenb. and Donn. (*commutata* of Roem. et Schultz), and *M. cæspitosa*, are retained as species, and no notice is taken of *M. lingulata*.

5. M. **arvénsis**, Hoffm. (*Field Scorpion-grass*); fruit smooth; calyx with spreading uncinate bristles ½ 5-cleft, when in fruit ovate closed shorter than the divergent pedicels, limb of the corolla concave equalling the tube. *Lehm. Asperif. p.* 90. *Hook. Scot. i. p.* 67. (*excl. syn.*)—*M. intermedia, Link, Enum. v. i. p.* 164. *Reichen. in Sturm, cum ic. M. scorpioides, α. arvensis, Linn. Sp. Pl. p.* 188. *Fl. Brit. p.* 212.

Very common in cultivated grounds, hedgebanks, groves, &c. *Fl.* June, Aug. ⊙.—Although Linnæus included other plants, now regarded as species, in his ideas of *M. scorpioides* and *arvensis*, and even preserved as such in his herbarium a specimen of the next species, yet, as it is evident from *Fl. Suec.* that this is what he held to be the type of the var., I think it best to follow those botanists who have named it *M. arvensis.* Fries asserts that every Swedish botanist knows it to be the "ipsissimam *M. arvensem*, Linn." It is moreover the only one usually found in cultivated fields. This species and *M. sylvatica* are inextricably confounded in *Engl. Fl.*—*M. arvensis, With.* (and probably *M. arvensis α. Willd. Sp. Pl.*) includes this species and *M. sylvatica* and *M. versicolor.*—*M. arvensis β. Willd.* is doubtless the same as *M. versicolor γ*, Lehm. and a stranger to the British Flora.

H. 6. M. **collína**, Hoffm. (*early Field Scorpion-grass*); fruit smooth; calyx with spreading uncinate bristles, when in fruit ventricose open equalling the diverging pedicels, limb of the corolla concave shorter than the tube, (raceme usually with one distant flower at the base.) *Reichen. in Sturm, cum. ic.*—*M. arvensis, Link, Enum. v. i. p.* 64. *Engl. Bot. t.* 2558. *Engl. Fl. v. i. p.* 252.—*M. arvensis, γ. Wahl. Fl. Suec. v. i. p.* 120. (*excl. syn.*)—*M. hispida.* "*Schlecht.*" *Mert. and Koch, Germ. v. ii. p.* 47.

On sandy banks, wall-tops, and other very dry places. *Fl.* April, May, and is usually quite dried up by midsummer. ⊙.—This is not a general plant, and appears to have been unknown to Lehman. Reichenbach in Sturm cites under it *M. verna*, Opitz, which is referred by Mertens and Koch to *M. stricta, Link,* and to which our N. American specimens, named *M. verna* by Nuttall, seem to belong. I know not why Reichenbach has fixed on *M. stricta,* as the *M. arvensis* of Sibthorpe: it does not appear evident that the former has been found at all in Britain, which is the *M. scorpioides arvensis, Ehrh. Herb. n.* 41. in Sir J. E. Smith's copy: and Smith himself, no doubt, alludes to that identical specimen, when he says that his own *M. arvensis* has sometimes several axillary flowers. There is almost always, in British specimens, one distant flower at the base of the primordial raceme only. Reichenbach, Bluff, (and if Mertens and Koch are right as to Hoffman's *M. collina*) Hoffman refer to *M. collina*, Ehrh.:—(that is to his *M.*

scorpioides collina) as the present plant. Now, the *M. scorpioides collina*, in Sir J. E. Smith's copy of Ehrhart, is *M. versicolor;* but it is very possible that Ehrhart may have confounded the two plants, and given our true *collina* in some of his sets. If otherwise, the present species should bear the name of "*M. hispida*, Schlechtendal;" though *præcox* or *fugax* would be more applicable as specific designations.

7. *M. versícolor*, Lehm. (*yellow and blue Scorpion-grass*)*;* fruit smooth; calyx with spreading uncinate bristles, when in fruit oblong (closed) longer than the almost erect pedicels, limb of the corolla concave shorter than the exserted tube. *Engl. Bot. t.* 2558. (*ad calc.*) *Reichen. in Sturm, cum ic.* (minus bona). *Hook. Scot. i. p.* 67. *Engl. Fl. v. i. p.* 253.—*M. arvensis γ. versicolor, Pers. Syn. v. i. p.* 156.—*M. arvensis β. minor, Roth, Germ. v. ii. p.*223.—*M. scorpioides collina, Ehrh. Pl. Exsicc. n.* 51. (according to Smith's copy). *M. scorpioides, β. Huds. Angl. p.* 78. *Smith Fl. Brit. p.* 212. *Engl. Bot. t.* 480. (fig. sinist.)—*M. scorpioides γ. Linn. Sp. Pl. p.* 189.

Common in wet meadows, &c. as well as dry places; hence varying much in height. *Fl.* Apr. June, ⊙.—Lehman quotes "*M. versicolor, Herb. Ehrh.*" as well as "*M. collina, Ehrh. Herb.*" Among Sir J. E. Smith's specimens, I found *M. versicolor*, as *M. scorp. collina*, but no specimens of Ehrhart named *versicolor*.—Wallroth (Sched. Crit. p. 72.) joins *M. versicolor*, and *M. stricta*, Link, under the name of *M. collina*, Ehrh., and adds a var. *β. simplex*, Pers., to which he cites *M. pusilla*, Loisel. and Rœmer and Schultes as synonyms. Mr. Bentham's specimens in our herbarium of *M. pusilla*, are very near to *M. stricta*, but appear different in habit, and have very few hooked bristles, but abundance of straight ones, on the calyx. *M. versicolor* is distinguishable at once from *M. stricta*, (which is *M. versicolor β.* Lehm.) by its stalked racemes. In *M. stricta*, the flowers begin among the leaves, sometimes from the very base of the stem; I believe, too, that none of them are yellow, and that they have a much shorter tube. Lehman says that the blossoms of *M. versicolor* retain unchanged their respective colours. Fries asserts the contrary. I have not attended to this point, but, certainly, it is always the upper, consequently the younger flowers, that are yellow.

9. ASPERÚGO. *Linn.* Madwort.

Cal. 5-cleft, unequal, with alternate smaller teeth. *Cor.* (short) funnel-shaped, its mouth closed with convex connivent scales. *Nuts* covered by the folded and compressed calyx.—Name from *asper*, *rough*, eminently applicable to this, even among the groupe of *Asperifoliæ.*

1. A. *procúmbens*, Linn, (*German Madwort*). *Engl. Bot. t.* 36. *Hook. Scot. i. p.* 70. *Engl. Fl. v. i. p.* 263.

Waste places in the north: Durham.—About Dunbar, and near Edinburgh. *Fl.* June, July. ⊙.—*Stems* procumbent, angular, rough with short hooked prickles. *Leaves* oblongo-lanceolate, solitary or opposite, or 3—4 nearly from the same point of the stem, lower ones petiolate, all rough and slightly hispid. *Flowers* blue, axillary, solitary. *Pedun-*

cles short, at first erect, then curved downward. *Cal.* small, much enlarged in fruit.

10. Cynoglóssum. *Linn.* Hound's tongue.

Cal. 5-cleft. *Cor.* (short) funnel-shaped, its mouth closed with convex, connivent scales. *Nuts* depressed, fixed to the *style* or central column.—Name from κυων, a *dog*, and γλωσσα, a *tongue:* from the shape and texture of the leaf.

1. C. *officinále,* Linn. (*common Hound's-tongue*) ; stem-leaves lanceolate attenuate at the base sessile downy, stamens shorter than the corolla. *Engl. Bot. t.* 921. *Hook. Scot. i. p.* 69. *Engl. Fl. v. i. p.* 260.

Waste grounds and by road-sides; less frequent in Scotland. *Fl.* June, July. ♂.—Whole plant soft to the touch, dull green, of a fetid smell; often 2 feet high. Lower *leaves* on long footstalks. *Flowers* purplish red. *Fruit* very rough.

2. C. *sylváticum,* Hænke, (*green-leaved Hound's-tongue*) ; stem-leaves lanceolate broad at the base shining sessile slightly hairy and scabrous, especially beneath, stamens shorter than the corolla. *Engl. Bot. t.* 1642. *Hock. Scot. i. p.* 69. *Engl. Fl. v. i. p.* 266.

Rare, shady places, by road-sides, &c. in the middle and east of England. Carse of Gowrie in Scotland. *G. Don.* Near Balbriggan, Ireland, *Dr. Scott. Fl.* June, July. ♂.—Distinguished readily from the last by the more or less shining and brighter coloured *leaves,* free from pubescence, and their different figure. *Root-leaves* ovato-lanceolate, on very long footstalks.

** *Perianth double. Corolla monopetalous, inferior. Seeds covered with a distinct capsule.—Gen.* 11—28.

11. Anagállis. *Linn.* Pimpernel.

Cal. 5-partite. *Cor.* rotate. *Stamens* hairy. *Capsule* bursting all round transversely.—*Nat. Ord.* Primulaceæ. *Vent.*—Name from αναγελαω, *to laugh.* Pliny says the *Anagallis* excites pleasure: and Dioscorides that it removes obstructions of the liver which create sadness.

H. 1. A. *arvénsis,* Linn. (*scarlet Pimpernel or Poor Man's Weatherglass*) ; leaves ovate sessile dotted beneath, margin of the corolla broadly and very obtusely crenate piloso-glandulose. *Engl. Bot. t.* 529. *Hook. Scot. i. p.* 72. *Engl. Fl. v. i. p.* 280.

Corn-fields, frequent. *Fl.* June, July. ☉.—*Flowers* bright scarlet, but Mr. John Dillwyn found at Penllegare, S. Wales, specimens with the flowers of a clear white, with a small, well defined, bright purplish pink eye in the centre of every corolla.

β ~~2. A~~. *cærúlea,* Schreb. (*blue Pimpernel*) ; ~~leaves ovate sessile dotted beneath,~~ margins of the corolla toothed scarcely at all glandulose. *Engl. Bot. t.* 1823. *Hook. in Fl. Lond. N. S. Hook. Scot. i. p.* 72. *Engl. Fl. v. i. p.* 280. Prof. Henslow has proved by cultivation from seed that this is a variety of A. ar sis

Corn-fields; not rare: for many stations are given in *Engl. Fl.* and *Fl. Scot.* to which may be added, near Broomfield, Essex, *Mr. Jonathan Grubb. Fl.* June, July. ⊙.—Scarcely different from the preceding but in the characters above given: yet these I have hitherto found constant. I have received the same plant from almost every quarter of the globe.

3. A. *tenélla*, Linn. (*Bog Pimpernel*); stem creeping filiform, leaves ovate or roundish stalked. *Engl. Bot. t.* 530. *Hook. Scot. i. p.* 73. *Engl. Fl. v. i. p.* 281.

Wet mossy bogs, frequent in England, more rare in Scotland. *Fl.* July, Aug. ♃.—A beautiful little plant, as are all of this Genus:—2—4 inches long. *Leaves* small. *Flowers* large, in proportion to the size of the plant, on rather long footstalks. *Cor.* subcampanulate, pink or rose-coloured.

12. Lysimáchia. *Linn.* Loosestrife.

Cal. 5-partite. *Cor.* rotate. *Stam.* not distinctly hairy. *Caps.* of 1 cell, with 10 valves.—*Nat. Ord.* Primulaceæ. *Vent.*—Name in honour of king *Lysimachus*, according to some; according to others from λυσις, a *dissolving*, and μαχη, *battle.* The English name, it will be at once seen, has a similar meaning. Pliny says it tames restive horses.

* *Peduncles many-flowered.*

1. L. *vulgáris*, Linn. (*great yellow Loosestrife*); leaves ovato-lanceolate opposite or ter-quaternate, panicle terminal. *Engl. Bot. t.* 761. *Hook. Scot. i. p.* 72. *Engl. Fl. v. i. p.* 277.

Sides of rivers and wet shady places: less frequent in Scotland. *Fl.* July. ♃.—Erect, 2—3 feet high. *Leaves* nearly sessile, glabrous or downy beneath. *Panicle* large, leafy, much branched. *Corollas* large, yellow, handsome.

2. L. *thyrsiflóra*, Linn. (*tufted Loosestrife*); leaves opposite lanceolate, racemes stalked lateral. *Engl. Bot. t.* 176. *Hook. Scot. i. p.* 72. *Engl. Fl. v. i, p.* 278.

Wet marshes and water-sides; very rare in England; Yorkshire, Hertfordshire and Anglesea. More frequent in Scotland: near Forfar, and at Duddingston Loch on the east: Canal side near Possil, and near Rossdhu, by Loch Lomond: in the former place most abundant and growing in the water. *Fl.* July. ♃.—1—2 feet high. *Flowers* numerous, small, collected into dense, axillary, peduncled *racemes.* Number of the parts of the flower very variable. *Cor.* deeply cut into very narrow segments, yellow, and as well as the *calyx* spotted with orange.

** *Peduncles* 1-*flowered.*

~~3. L. *punctáta*, Linn. (*four-leaved Loosestrife*); erect, downy, leaves ovato-lanceolate whorled petiolate, peduncles whorled axillary. *Roem. et Schultes, Syst. Veget. v.* 4. *p.* 125. *Jacq. Austr. v.* 4. *p.* 366.~~

~~Moist banks of rivers, rare. Discovered by the late *Mr. Nathan Backhouse*, in 1803, on the margins of the Skern, north of Darlington, most frequently on the west side of the river, both above and below the rail-~~

way bridge. *Fl.* July. ♃.—~~Habit of *L. vulgaris:* erect, with whorled leaves, 4—5 in a whorl. Whole plant downy. *Leaves* sometimes dotted, not so in my specimens from Germany. *Flowers* in *whorls* on stalks each bearing a single blossom, yellow, dotted with deeper colour. This species had long lain in the herbarium of Mr. Backhouse, under the name of *L. vulgaris:* but on examining it with a little attention, Mr. James Backhouse soon determined it to be the *L. punctata*, and kindly communicated the particulars respecting it to me. It will probably, ere long, be found in other situations.~~

11 4. L. *Némorum*, Linn. (*yellow Pimpernel, or Wood Loosestrife*); leaves ovate acute, stem creeping, peduncles solitary, calycine segments linear-subulate, stamens smooth. *Engl. Bot. t.* 527. *Hook. Scot. i. p.* 72. *Engl. Fl. v. i. p.* 278.

Woods and shady places, frequent. *Fl.* during the summer months. ♃.

8. 5. L. *Nummulária*, Linn. (*creeping Loosestrife, Money-wort or Herb Twopence*); leaves subcordate obtuse, stem prostrate, peduncles solitary, calycine segments ovate acute, filaments glandular. *Engl. Bot. t.* 528. *Hook. Scot. i. p.* 72. *Engl. Fl. v. i. p.* 279.

Shady places and pastures. *Fl.* June, July. ♃.

13. Cýclamen. *Linn.* Sow-bread.

Cal. campanulate, ½ five-cleft. *Cor.* rotate, the mouth prominent, the segments reflexed. *Caps.* globose, 1-celled, opening with 5 teeth.—*Nat. Ord.* Primulaceæ. *Vent.*—Name from κυκλος, a circle, probably from the circles formed by the spiral peduncles. In French *Pain de porçeau*, and in English *Sow-bread*, because the large tuberous roots are eagerly sought by swine, notwithstanding their highly acrid nature.

1. C. *hédercæfolium*, Willd. (*Ivy-leaved Cyclamen or Sow-bread*); "leaves heart-shaped angular finely toothed, their ribs and footstalks roughish." *Engl. Fl. v. i. p.* 273.—*Cyclamen europæum*, *Engl. Bot. t.* 548.

On a bank at Bramfield, Suffolk, *D. E. Davy, Esq.* scarcely indigenous. *Leaves* springing from the top of the large, tuberous *root*. *Cor.* white or flesh-coloured. *Scapes* spirally twisted after flowering, so as to bury the seed-vessels in the earth.

14. Prímula. *Linn.* Primrose.

Cal. tubular, 5-toothed. *Cor.* salver-shaped, its tube cylindrical, its mouth open. *Capsule* opening with 10 teeth.—*Nat. Ord.* Primulaceæ. *Vent.*—Name from *primus, first*, on account of the early appearance of the flowers in the commonest of the species.

H. 1. P. *vulgáris*, Linn. (*common Primrose*); leaves toothed wrinkled, scape single-flowered, limb of the corolla flat. *Engl. Bot. t.* 4. *Hook. Scot. i. p.* 71. *Engl. Fl. v. i. p.* 270.—*P. veris* γ *acaulis*, *Linn.*—*Henslow.*

dimorp
long-sty
short-sty

Woods, hedge-banks and pastures, abundant. *Fl.* April, May, and till June on the mountains of Scotland. ♃.—If the *scapes* are traced to their very base, they will be found to spring from one common point and to constitute a sessile *umbel.*

H. 2. P. *elátior*, With. (*Oxlip Primrose*); leaves toothed wrinkled contracted below the middle, scape umbellate, limb of the corolla flat. *Engl. Bot. t.* 513. *Hook. Scot. i. p.* 71. *Engl. Fl. v. i. p.* 270. —*P. veris β. elatior, Linn.—Henslow.*

Woods and thickets, not common: more rare in Scotland. About Dublin, *Mr. J. T. Mackay. Fl.* Apr. May. ♃.—Mr. Wilson finds specimens of this with some scapes bearing solitary *flowers* and others umbellate: so that whatever may be thought of the following species, this cannot really be considered distinct from *P. acaulis.*

H. 3. P. *véris*, Linn. (*common Cowslip or Paigle*); leaves toothed wrinkled contracted below the middle, scape umbellate, calycine teeth obtuse, limb of the corolla concave. *Engl. Bot. t.* 5. *Hook. Scot. i. p.* 71. *Engl. Fl. v. i. p.* 271.—*P. veris α. officinalis, Henslow.*

[illegible] like P. vulgaris

Meadows and pastures, frequent in a clayey soil in England. Very rare in Scotland. About Edinburgh. Introduced about Glasgow, *Hopkirk. Fl.* Apr. May. ♃.—Various are the opinions respecting the above 3 *Primulas*, as to the permanency of their specific character. Professor Henslow has seen the three produced from the same root: and thus, in his useful little *Catalogue of British Plants arranged according to the Nat. System*, has reduced them to *vars.* of *P. veris*, as Linnæus had done. Few plants are, however, more constant to the characters here laid down than these are, as generally seen growing in their wild stations. They rarely are found intermixed: and in Scotland the two last kinds are scarcely known. Some are of opinion that the *P. elatior* is a hybrid between the other two: but Mr. H. F. Talbot found, upon the summit of a high mountain, near the Lake of Thun, in Switzerland, *P. elatior* in abundance, while *P. veris* was confined to the *base* of the hill, and *P. vulgaris* was not found within 50 miles of it.

H. 4. P. *farinósa*, Linn. (*Bird's-eye Primrose*); leaves obovato-lanceolate mealy crenulated, calyx oblongo-ovate, limb of the corolla plane its mouth obscurely glandular, the segments obcordate attenuated at the base distant "nearly as long as the tube." *Engl. Bot. t.* 6. *Hook. Scot. i. p.* 71. *Engl. Fl. v. i. p.* 272.

Mountainous pastures in the north of England, especially in Yorkshire, not unfrequent. In Scotland very rare, only seen, I believe, south of Edinburgh: the stations given in *Fl. Scotica* all belonging to the following species. Not found in Ireland. *Fl.* June, July. ♃.—One of the most elegant of plants, scarcely yielding in beauty to the next species. The powdery substance on the leaves, scape, and calyx has a musky smell. *Flowers* pale lilac purple, with a yellow eye.

5. P. *Scótica*, Hook. (*Scottish Primrose*); leaves obovato-lanceolate mealy denticulate, calyx ventricose, limb of the corolla flat, its mouth glandular, the segments broadly obcordate approximate "half the length of the tube." *Hook. in Fl. Lond. N. S. t.* 133. *Engl. Fl. p.* 272. (excluding the syn. *P. stricta.*)

North coast of Caithness, discovered by *Mr. W. Gibb* of Inverness. Frequent also on the north coast of Sutherland, and in the Orkney Islands; growing upon the sandy shores. *Fl.* July. ♃.—A most distinct and rare species of Primrose, not half the size of the preceding, but with a stouter habit. *Flowers* deep bluish purple, with a yellow eye. In *P. farinosa* the *germen* is broadly obovate and the *stigma* capitate: here the *germen* is globose, and the *stigma* with 5 points. Dr. Graham first observed the difference in the relative length of the segments of the corolla, a character which he thinks may be advantageously employed in distinguishing other allied species of *Primula.* This has no affinity with *P. stricta* of Hornemann, to which Smith, though doubtfully, referred it; nor have I seen specimens from any country save those just mentioned.

15. HOTTÓNIA. *Linn.* Water Violet.

Cal. 5-partite. *Cor.* salver-shaped, with a short tube. *Stamens* inserted at the mouth of the tube. *Stigma* globose. *Capsule* globose, (valveless, *Spr.*, opening with 5 teeth, *Sm.*) tipped with the long style.—*Nat. Ord.* PRIMULACEÆ. *Vent.*—Named after *Pierre Hotton*, a Professor at Leyden during the latter half of the 17th century.

1. H. *palústris*, Linn. (*common Water Violet or Featherfoil*); flowers whorled on a long solitary cylindrical stalk, corolla longer than the calyx, leaves pectinated. *Engl. Bot. t.* 364. *Engl. Fl. v. i. p.* 276.

Ditches and pools in England. Downpatrick, Ireland, *Mr. J. T. Mackay.* Not found in Scotland. *Fl.* June. ♃.—*Root* creeping. *Leaves* all submerged. *Flowers* large, handsome, pale purple, rising above the water.

16. MENYÁNTHES. *Linn.* Buckbean.

Cal. 5-partite. *Cor.* funnel-shaped, the segments hairy within. *Stigma* 2-lobed. *Capsule* 1-celled; *seeds* parietal.—*Nat. Ord.* allied to GENTIANEÆ, *Br.*—Name, μηνη, a *month*, and ανθος, a *flower.* Sir James Smith says the blossoms continue in perfection about a month.

H. 1. M. *trifoliáta*, Linn. (*common Buckbean or Marsh Trefoil*); *Engl. Bot. t.* 495. *Hook. Scot. i. p.* 71. *Engl. Fl. v. i. p.* 274.

Marshy places, boggy ground, &c. frequent. *Fl.* June, July. ♃.—*Roots* densely creeping and matted, so as often to render the boggy ground firm where the plant grows. *Leaves* ternate, stalked: *leaflets* obovate, obscurely toothed. The base of the leaf is sheathing, whence arises a *flowerstalk* supporting a compound *raceme* or *thyrsus*, of many white *flowers*, tipped externally with red and beautifully fringed with white filaments within.—In the Highlands of Scotland, employed as tea, it is considered to strengthen weak stomachs. It cures the disease called *darn* in cattle; and is sometimes used as a substitute for hops, (*Mr. Gibb.*) All these qualities indicate the bitter principle which abounds so much in the *Gentian tribe.*

17. VILLÁRSIA. *Vent.* Villarsia.

Cal. 5-partite. *Cor.* rotate, the limb often ciliated. *Caps.* 1-celled. *Seeds* parietal.—*Nat. Ord.* allied to GENTIANEÆ, *Br.* —Named in compliment to *M. de Villars,* author of *Flore du Dauphiné.*

H. 1. V. *nymphǽoides,* Vent. (*Nymphæa-like Villarsia*); leaves orbiculari-cordate floating, peduncles aggregate single-flowered, corollas ciliated. *Hook. in Fl. Lond. N. S. t.* 168.—*Menyanthes nymphæoides, Linn.*—*Engl. Bot. t.* 217.

Rare; in rivers and still waters. In the Thames. Abundant in the canal near Downham Market and Wisbeach. In Yorkshire.—*Fl.* July, Aug. ♃.—A beautiful plant, easy of cultivation, and difficult to be eradicated. *Flower* large, yellow, curiously plaited. The canals in Holland are sometimes covered with this plant, which has quite a different habit from the true *Menyanthes. Stigma* 5-cleft. The ripe *fruit* I have not seen. Mr. Brown says that in the *aquatic* species of this genus, the capsule is valveless; 2-valved in the others.

+18. ERYTHRǼA. *Renealm.* Centaury.

Cal. 5-cleft. *Cor.* funnel-shaped, marcescent, its limb short. *Anthers* at length spirally twisted. *Style* erect. *Stigmas* 2. *Caps.* linear, 2-celled. *Br.*—*Nat. Ord.* GENTIANEÆ. *Juss.*—Name from ερυθρος, *red,* the colour of the flowers in most of the species.

H. 1. E. *Centaúrium,* Pers. (*common Centaury*); stem nearly simple, leaves ovato-oblong, flowers sessile (or nearly so) fasciculato-paniculate, calyx half as long as the tube of the corolla. *Hook. Scot. i. p.* 79. *Engl. Fl. v. i. p.* 320.—*Chironia Centaurium, Curt.* —*Engl. Bot. t.* 417.—*Gentiana Centaurium, Linn.*

Dry pastures, frequent. *Fl.* July, Aug. ☉.—8—10 inches to a foot high. *Root-leaves* spreading, three-nerved, broader than those of the stem, which are in distant pairs. *Panicles* of *flowers* fascicled near the top of the stem, and forming a sort of *corymb. Corolla* handsome, rose-coloured.

V. 2. E. *pulchélla,* Hook. (*Dwarf branched Centaury*); stem much branched, leaves ovato-oblong, flowers pedicellate in lax panicles, calyx nearly as long as the tube of the corolla. *Hook. Scot. i. p.* 79. *Engl. Fl. v. i. p.* 322.—*Chironia pulchella, Willd.*—*Engl. Bot. t.* 458.—*C. pulchella β. Duby, Bot. Gall. p.* 328.—*Gentiana pulchella, Swartz.*—*G. Centaurium β. Linn.*

Sandy sea-shores; England and Scotland. Cape Clear Island, Ireland, *Mr. Drummond. Fl.* Aug. Sept.—☉.—*Stems* 2—4 or 6 inches high, slender and much branched from near the base. *Panicle* spreading, leafy, dichotomous, with a single flowerstalk between the branches.—Probably only a *var.* of the preceding.

H. 3. E. *littorális,* Hook. (*Dwarf tufted Centaury*); stem simple or branched, leaves ovato-oblong, flowers sessile capitato-paniculate.

+possesses valuable tonic properties, its French name is "quinquine des pauvres"—

calyx as long as the tube deeply cleft. *Hook. Scot. i. p.* 80. *Engl. Fl. v. i. p.* 320.—*Chironia littoralis, Turn. and Dillw. Bot. Guide, p.* 469. *Engl. Bot. t.* 2305.—*Ch. pulchella, Don, Fl. Brit. Fasc. i. n.* 7.

Sandy coasts of Scotland, Northumberland, Lancashire, Wales. Portmarnock sands, Ireland, *Mr. J. T. Mackay. Fl.* June, July. ⊙.—Varying in height from 2—6 inches. *Leaves* all narrow. *Cal.* segments very long, in my specimens scarcely united by a membrane as in the 2 preceding species, as long as the tube of the corolla: but most of the characters given for this species, are said by Mr. Turner, the founder of the species, to vary in specimens he has seen: and I fear it has little right to be kept distinct from *E. Centaurium.* Mr. Wilson finds many specimens which cannot be referred to either of them, owing to differential marks as slight as those attributed to this and the preceding one.

4. E. *latifólia*, Sm. (*broad-leaved tufted Centaury*); stem 3-cleft at the top, flowers in dense forked tufts, calyx as long as the tube, segments of the corolla lanceolate, lower leaves broadly elliptical with 5 or 7 ribs. *Engl. Fl. v. i. p.* 321.—*Chironia Centaurium, var.* 2. *Sm. Fl. Brit. p.* 1393.

Sea-shore of Lancashire: sandy ground near the sea, to the north of Liverpool, *Dr. Bostock and Mr. Shepherd.* 1803. (*Sm.*). Near Holyhead, *Mr. W. Wilson.* County of Down, Ireland, *Mr. T. Drummond.* Isle of Staffa, *Rev. G. Gordon. Fl.* July. ⊙.—This has more the *appearance* of a species than either of the two last. Some of my Irish specimens have the *leaves* an inch and a half long, and ¾ of an inch broad, not confined to the root, and rising one pair close above the other. Yet I can hardly persuade myself it is distinct from the first species, *E. Centaurium.*

19. DATÚRA. *Linn.* Thorn-apple.

Cal. tubular, deciduous. *Cor.* funnel-shaped, plaited. *Stigma* 2-lobed. *Capsule* ½ four-celled, 4-valved.—*Nat. Ord.* SOLANEÆ. *Juss.*—Name, from its Arabic appellation *Tâtôrah*, (Forskal). In some parts of the East Indies too, it is called *Dâturo.*

1. D. *Stramónium*, Linn. (*common Thorn-apple*); herbaceous, leaves ovate angulato-sinuate glabrous, fruit ovate erect clothed with numerous nearly equal spines. *Engl. Bot. t.* 1288. *Engl. Fl. v. i. p.* 314.

Waste ground in England, in the neighbourhood of gardens or towns, not indigenous. *Fl.* July. ⊙.—The narcotic qualities of this plant are well known. The *capsule* has 4 cells below, and is divided by four dissepiments of which two only reach the top: hence the summit is 2-celled.

20. HYOSCÝAMUS. *Linn.* Henbane.

Cal. tubular, 5-cleft. *Cor.* funnel-shaped, oblique. *Caps.* 2-celled, opening with a lid.—*Nat. Ord.* SOLANEÆ. *Juss.*—Name from ὑς, ὑος, a *Hog*, and κυαμος, a *bean.* Hogs are said to eat the fruit, which bears some resemblance to a bean. The seeds do not prove injurious, though the plant be esteemed poisonous.

H. 1. H. *níger*, Linn. (*common Henbane*); leaves amplexicaul sinuated, flowers nearly sessile. *Engl. Bot. t.* 591. *Hook. Scot. i. p.* 78. *Engl. Fl. v. i. p.* 315.

Waste places, especially in a chalky soil; often near towns and villages. *Fl.* July. ⊙.—*Stem* much branched, rounded. Whole plant covered with unctuous, fetid hairs. *Leaves* subovate. *Calyx* veined, as is the large dingy yellow *corolla*, with purplish brown lines; its tubular part swells and firmly encloses the *capsule*, of which the upper part falls off like a lid. *Plant* highly narcotic.

21. Atropa. *Linn.* Dwale.

Cal. 5-partite. *Cor.* campanulate, the lobes equal. *Stam.* distant. *Berry* of 2 cells.—*Nat. Ord.* Solaneæ. *Juss.*—Name from *Atropos*, one of the Fates, in allusion to its deadly quality.

H. 1. A. *Belladónna*, Linn. (*common Dwale, or deadly Nightshade*); stem herbaceous, leaves ovate undivided, flowers axillary on short peduncles. *Engl. Bot. t.* 592. *Hook. Scot. i. p.* 78. *Engl. Fl. v. i. p.* 316.

Hedges and waste places, especially among ruins and near towns. *Fl.* June. ♃.—3 feet and more high. *Leaves* entire, some very large, but placed in pairs of unequal sizes. *Flowers* drooping, lurid purple. *Berries* shining, black, highly injurious when taken internally. Their effects are said to be best counteracted by drinking plentifully of vinegar.

22. Solánum. *Linn.* Nightshade.

Cal. 5—10 partite. *Cor.* rotate. *Anthers* opening with 2 pores at the extremity. *Berry* roundish, 2 or more celled.—*Nat. Ord.* Solaneæ. *Juss.*—Name of doubtful origin. According to some from *Solamen*, on account of the *comfort* or *solace* derived from some species as a medicine.

1. S. *Dulcamára*, Linn. (*woody Nightshade or Bittersweet*); stem without thorns shrubby climbing, leaves cordate, upper ones hastate, corymbs inserted opposite the leaves drooping. *Engl. Bot. t.* 365. *Hook. Scot. i. p.* 79. *Engl. Fl. v. i. p.* 317.

Moist hedges and thickets: not common in Scotland. About Dublin, *Mr. J. T. Mackay*. *Fl.* June, July. ♄.—*Flowers* purple, with 2 green tubercles at the base of each segment. *Anthers* large, yellow, united into a pyramidal or cone-shaped figure.—This has been much employed in medicine, especially in rustic practice.—A hairy *var.* is mentioned by Ray, as growing on the southern coast of England.

H. 2. S. *nígrum*, Linn. (*common or Garden Nightshade*); stem without thorns herbaceous, leaves ovate bluntly toothed and waved, umbels lateral drooping. *Engl. Bot. t.* 566. *Hook. Scot. i. p.* 79. *Engl. Fl. v. i. p.* 318.

Waste places, fields, &c. frequent. *Fl.* June—Sept. ⊙.—*Flowers* white. *Berries* globose, black.

+ 23. Verbáscum. *Linn.* Mullein.

Cal. 5-partite. *Cor.* rotate, irregular. *Stam.* declined, often

+ The downy covering formerly used for the wicks of tapers, & in high repute for diseases of the lungs.

hairy. *Caps.* of 2 cells and 2 valves.—*Nat. Ord.* SOLANEÆ. *Juss.*—Name, altered from *Barbascum*, from *Barba*, a beard, in allusion to the shaggy nature of its foliage.

H. 1. V. *Thápsus*, Linn. (*great Mullein*); leaves decurrent woolly on both sides, stem simple, spike of flowers very dense, 2 stamens longer glabrous. *Engl. Bot. t.* 549. *Hook. Scot. i. p.* 78. *Engl. Fl. v. i. p.* 308.

Banks and waste ground, in a light, sandy, gravelly or chalky soil. *Fl.* July, Aug. ♂.—*Stem* 4—5 feet high, angular, winged. *Leaves* thick, excessively woolly, ovate or oblong. *Spike* long, cylindrical. *Flowers* handsome, golden yellow, when dried in the sun giving out a fat matter used in Alsace as a cataplasm in hæmorrhoidal complaints. Three of the *stamens* are hairy; 2 longer ones glabrous.

H. 2. V. *Lychnítis*, Linn. (*white Mullein*); leaves oblong wedge-shaped nearly glabrous above, stem angular and panicled. *Engl. Bot. t.* 58. *Hook. Scot. i. p.* 78. *Engl. Fl. v. i. p.* 309.

Road-sides, pastures, and fields, especially in a chalky soil.—*Fl.* July, Aug. ♂.—*Flowers* numerous, rather small, cream-coloured. *Leaves* below very woolly. *Stamens* hairy.

V. thapsiforme;

3. V. *pulveruléntum*, Vill. (*yellow hoary Mullein*); leaves See Errata ovato-oblong subserrated pulverulento-tomentose on both sides, stem rounded panicled. *Engl. Bot. t.* 487. *Hook. Scot. i. p.* 78. *Engl. Fl. v. i. p.* 310.

Road-sides on a gravelly or chalky soil: frequent in Norfolk and Suffolk. Den near Cullen, Scotland, *Mr. Maughan. Fl.* July. ♂.—Remarkable for the mealy down on the leaves, which is easily removed from the surface. *Flowers* large, handsome. If the plant be struck suddenly and violently, the expanded corollas will in a short time fall off, and the calyx will close over the germen. (*Sm.*)

H. 4. V. *nígrum*, Linn. (*dark Mullein*); leaves oblongo-cordate petioled crenate subpubescent. *Engl. Bot. t.* 59. *Hook. Scot. i. p.* 78. *Engl. Fl. v. i. p.* 311.

Banks and way-sides, particularly in a gravelly or chalky soil. Rare in Scotland. Between Seton and Gosford, *Dr. Yule.* Banks of the Esk, and Borthwick Castle, *Mr. Maughan. Fl.* July, Aug. ♃.—*Leaves* nearly glabrous, dark green. *Flowers* in clusters on the almost simple long spike. *Cor.* rather large, yellow. *Stam.* with bright purple hairs.

5. V. *virgátum*, With. (*large-flowered Primrose-leaved Mullein*); "leaves ovato-lanceolate toothed sessile, radical ones downy somewhat lyrate, stem branched, flowers aggregate partly sessile." *Engl. Bot. t.* 550. *Engl. Fl. v. i.* 311.

Fields, and by road-sides, rare. Field near Wrexham, *Mrs. Nash*; from whose garden at Beven near Worcester, it is presumed to have established itself in the neighbourhood. (*Sm.*). Near Plymouth, *Mr. Banks. Fl.* Aug. ♂.—Allied to the following.

H. 6. V. *Blattária*, Linn. (*Moth Mullein*); leaves amplexicaul crenate oblong glabrous, radical ones sinuate, upper ones acuminate,

supposed to repel moths, cockroaches &c.

flowers stalked remote collected into an elongated branched raceme. *Engl. Bot. t.* 393. *Engl. Fl. v. i. p.* 312.

Banks in a gravelly soil, rare. In several places in Kent, (whence specimens have been sent to me, from Cobham, by *the Rev. Prof. Henslow*); and not unfrequent in Devonshire and Cornwall. Near Plymouth. *Mr. Banks. Fl.* July. ⊙.

24. CONVÓLVULUS. *Linn.* Bindweed.

Cal. 5-cleft. *Cor.* campanulate, plicate. *Stigmas* 2. *Caps.* of 1 ~~2~~—3 cells, with as many valves. *Cells* 1—2 seeded.—*Nat. Ord.* CONVOLVULACEÆ. *Juss.*—Name from *convolvo*, to *entwine*: whence, too, the English name *Bindweed.* The tribe possesses medicinal qualities

* *With two small bracteas remote from the calyx.*

H. 1. C. *arvénsis*, Linn. (*small Bindweed*); stem climbing, leaves sagittate their lobes acute, peduncles mostly single-flowered, bracteas minute distant from the flowers. *Engl. Bot. t.* 312. *Hook. Scot. i. p.* 73. *Engl. Fl. v. i. p.* 284.

Corn-fields, hedges, &c. especially in a light soil. *Fl.* June, July. ♃.—*Flowers* rather small, rose-coloured. *Root* running very deep into the ground and difficult of extirpation.

** *With two large bracteas applied to the calyx.* (Calystegia. *Br.*)

H. 2. C. *Sépium*, Linn. (*great Bindweed*); stem climbing, leaves sagittate the lobes truncate, peduncles 4-sided single-flowered, bracteas large heart-shaped close to the flower. *Engl. Bot. t.* 313. *Hook. Scot. i. p.* 74. *Engl. Fl. v. i. p.* 284.

Moist woods and hedges. *Fl.* July, Aug. ♃.—Much larger than the last in every part. *Flowers* very large, showy, pure white.

H. 3. C. *Soldanélla*, Linn. (*Sea Bindweed*); stem prostrate, leaves reniform fleshy, peduncles 4-sided single-flowered their angles winged, bracteas large ovate close to the calyx. *Engl. Bot. t.* 314. *Hook. Scot. i. p.* 74. *Engl. Fl. v. i. p.* 285.

Sea-shore in sandy places, frequent. *Fl.* June—Aug. ♃. *Root* long, creeping. *Flowers* few, large, rose-coloured. *Capsules* ~~of 3—4 cell~~s, 1. cel ~~less frequently of 2, never of 1. (*Mr. James Wilson.*)~~

25. POLEMÓNIUM. *Linn.* Jacob's Ladder.

Cal. 5-cleft. *Cor.* rotate. *Stam.* inserted upon the 5 teeth or valves which close the mouth of the corolla. *Stigmas* 3. *Capsule* 3-celled, 3-valved.—*Nat. Ord.* POLEMONIACEÆ. *Juss.*—Name from πολεμος, *war.* According to Pliny this plant caused a war between two kings who laid claim to its discovery.

1. P. *cærúleum*, Linn. (*Blue Jacob's Ladder*); leaves pinnated glabrous, leaflets oblongo-lanceolate, flowers erect. *Engl. Bot. t.* 14. *Hook. Scot. i. p.* 74. *Engl. Fl. v. i. p.* 286.

Banks and bushy places, rare; chiefly found in the north. In Derbyshire and Yorkshire. About Queensferry, Arniston and Delvine woods, Scotland. Knockmaron Hill, Ireland, *Mr. J. T. Mackay. Fl.* June. ♃. One to two feet high. *Stem* angular. *Flowers* large, blue, sometimes white.

26. AZÁLEA. *Linn.* Azalea.

Cal. 5-partite. *Cor.* shortly campanulate, regular. *Stam.* inserted at the base of the *cor.*, straight. *Anthers* bursting longitudinally. *Caps.* 2—3-valved, 2—3-celled; dissepiment formed by the inflexed margins of the bifid valves. *Seeds* attached to a central, at length free, receptacle.—*Nat. Ord.* ERICEÆ. *Juss.*—Name from *αζαλεος, parched, arid:* because in such places the plant grows.

1. A. *procúmbens*, Linn. (*trailing Azalea*). *Engl. Bot. t.* 865. *Hook. Scot. i. p.* 73. *Engl. Fl. v. i. p.* 282.—*Chamæledon, Link.*—*Loiseleuria, Desvaux.*

Dry moory ground, on most of the Scottish Highland mountains, among grass and moss: especially abundant in the north; and nowhere perhaps more plentiful than on the Cairngorum range, where it forms large dark green patches. *Fl.* May, June. ♄.—A low *shrub* with very woody tortuous *stems*, and crowded leafy branches. *Leaves* small, almost like those of *Thyme*, but quite smooth and glossy above, rigid, channelled, their margins remarkably revolute; midrib below broad and prominent. *Flowers* in short terminal *racemes*. *Pedicels* with short ovate *bracteas* at the base, swollen upwards. *Cal.* deeply 5, sometimes 6-partite, purple, segments oblong, fleshy. *Corolla* flesh-coloured, subcampanulate, with 5 oblong, moderately spreading, sometimes unequal, obtuse *segments*. *Stamens* inserted upon a fleshy disk or base to the germen, a little shorter than the corolla. *Anthers* of 2 oval *cells*, opening distinctly by a longitudinal fissure, lead-coloured. *Germen* upon a fleshy base or disk scarcely broader than itself, ovate, 2 or 3-celled. *Style* about equal to it in length; *stigma* capitate, obscurely lobed. *Capsule* broadly ovate, with a somewhat spongy coat, purplish brown, opening by 2 or 3 valves, according as the cells are 2 or 3; the margins of the valves entering into the capsule and thus forming the dissepiments: again, each valve is deeply cleft; so that on looking at the upper half of an open capsule we find 4 or 6 valves or segments, each having *one* of its sides introflexed, to form (with the introflexed side of the neighbouring segment) a dissepiment of a double plate. *Seeds* fixed to 2 or 3 lobes of a central, at length, (when the valves open) free column or *receptacle*, oval, pale brown, dotted.

I have been the more particular in my description of this plant, because the accounts of authors are at variance. Smith says that he has never seen the anthers burst longitudinally: but nothing can be more clear than the opening of the cells by a fissure as long as the cell. The same author, too, and even Mr. Don, whose description in most other particulars (*see Ed. Phil. Journ. v.* vi. *p.* 48.) is very accurate, say that the capsule is 5-celled, 5 valved, the valves cloven. I find both in the germen and in the capsule only 2 or 3 cells, as figured by Gærtner, and the same structure in the rest of the fruit as is so well described by that admirable carpologist.—It was upon this species that Linnæus founded the Genus *Azalea*. The other *Azaleas* are now properly referred to *Rhododendron* by Mr. Don, as was suggested many years ago by Mr. Salisbury. *A. procumbens* abounds in the Arctic Regions, and, I believe, throughout the whole of the northern hemisphere. It is found, in America, as far south as the White Mountains of New Hampshire. My friend Dr. Boott gathered it on Mount Washington of that range: and it is extremely plentiful on the higher parts of the Rocky Mountains. With us it is not found in England, nor in Ireland.

27. VÍNCA. *Linn.* Periwinkle.

Cal. 5-partite. *Cor.* salver-shaped, the segments oblique, spirally imbricated in the bud. *Follicles* 2, erect. *Seeds* naked (destitute of seed-down).—*Nat. Ord.* APOCYNEÆ. *Juss.*—Name, supposed from *Vincio*, to *bind*, as the trailing stems do the plants which grow in its neighbourhood.

H. 1. V. *mínor*, Linn. (*lesser Periwinkle*); stems procumbent, leaves oblongo-lanceolate their margins as well as the small lanceolate teeth of the calyx glabrous. *Engl. Bot. t.* 917. *Hook. Scot. i. p.* 82. *Engl. Fl. v. i. p.* 338.

Hedges and banks in woods, but too often near pleasure-grounds. *Fl.* May, June, ♃.

2. V. *májor*, Linn. (*greater Periwinkle*); stem suberect, leaves ovato-cordate their margins as well as those of the elongated subulate segments of the calyx ciliated. *Engl. Bot. t.* 514. *Hook. Scot. i. p.* 83. *Engl. Fl. v. i. p.* 339.

Woods and thickets: often planted. *Fl.* May, ♃.—Twice the size of the former in all its parts. *Corolla* in both mostly purple, but varying in intensity. The *anthers, stigma,* and *fruit* (*a follicle*) are highly curious in this genus.

****Perianth double. Corolla monopetalous, superior.* Gen. 29—34.

28. SÁMOLUS. *Linn.* Brook-weed.

Cal. 5-cleft. *Cor.* salver-shaped, its tube short, with 5 scales (imperfect *stamens*) at its mouth, alternating with the lobes. *Capsule* half inferior, 1-celled, many-seeded, opening with 5 valves. *Seeds* upon a large central free receptacle.—*Nat. Ord. Allied to* PRIMULACEÆ. *Br.*—Name, some say from the island Samos, where *Valerandus* a botanist of the 16th century is said to have gathered our *Samolus Valerandi.* Others, as Théis, from *San, salutary,* and *mos,* a *hog* in Celtic, because it was used by the ancients for the curing of diseases in hogs.

1. S. *Valerándi*, Linn. (*Brook-weed or Water Pimpernel*); leaves obtuse, racemes many-flowered, pedicels with a small bractea. *Engl. Bot. t.* 703. *Hook. Scot. i. p.* 80. *Engl. Fl. v. i. p.* 323.

Marshy and watery places, especially in a gravelly soil. *Fl.* July, ♃.—This plant is very generally dispersed throughout the world. *Stem* 8—10 inches high, rounded, glabrous, as well as the ovate, subpetiolate, and entire fleshy *leaves.* *Flowers* small, white. *Cal.* small, 5-cleft, persistent: the segments surmounting the rounded *capsule.*

29. Jasíone. *Linn.* Sheep's-bit.

Cor. rotate, in 5 deep segments. *Anthers* united at their base. *Stigma* club-shaped. *Caps.* 2-celled, opening at the top. (*Flowers collected into a head, within a many-leaved Involucre.*)—*Nat. Ord.* Lobeliaceæ. *Juss.*—Name, supposed from *ιον*, a *violet*, from the blue colour of the flowers, applied by Pliny to some esculent plant.

H. 1. J. *montána*, Linn. (*annual Sheep's-bit or Sheep's Scabious*); leaves linear waved hispid, peduncles solitary elongated, root annual. *Engl. Bot. t.* 882. *Hook. Scot. i. p.* 76. *Engl. Fl. v. i. p.* 296.

Dry heathy pastures, in a light gravelly or heathy soil. *Fl.* June, July, ⊙.—*Stem* 6—10 inches high, branched. *Flowers* bright blue, in terminal, dense, hemispherical *heads*, surrounded by a many-leaved *involucre*. *Cal.* small, superior, 5-toothed. *Cor.* in 5 deep and narrow segments. *Anthers* united at the base. The whole inflorescence has, indeed, a very near affinity with that of the Class *Syngenesia*, where Linnæus placed it. Here, however, the little flowers are pedicellate upon the receptacle, and there is a distinct and true *calyx* to each.

30. Lobélia. *Linn.* Lobelia.

Cor. irregular, 2-lipped, cleft longitudinally on the upper side. *Anthers* united. *Stigma* hairy. *Capsule* 2—3 celled, the upper free part 2-valved.—*Nat. Ord.* Lobeliaceæ. *Juss.*—Named in honour of *Matthias Lobel* or *L'Obel*, a Fleming, but naturalized in England, where he published several learned botanical works.

H. 1. L. *úrens*, Linn. (*acrid Lobelia*); stem erect, leaves toothed nearly glabrous, radical ones obovate petioled, upper ones lanceolate sessile, raceme terminal bracteated, calyx rough. *Engl. Bot. t.* 953. *Engl. Fl. v. i. p.* 298.

Heathy ground, very rare, only found near Axminster, *Mr. Newberry*; and Ottery St. Mary, Devonshire, *Miss Burgess*. *Fl.* Aug. Sept. ♃.—Milky, and, as its name implies, very acrid. One foot or more high, with distant *leaves* and axillary branches. *Flowers* deep-purple, slightly downy without.

H. 2. L. *Dortmánna*, Linn. (*Water Lobelia*); leaves radical subcylindrical and obtuse of two parallel tubes, stem scarcely leafy, flowers racemed. *Engl. Bot. t.* 140. *Hook. Scot. i. p.* 76. *Engl. Fl. v. i. p.* 297.

Lakes in the north and north-west of England, Scotland and Ireland, especially in the mountainous parts, frequent; often forming a green carpet at the bottom of the water with its densely matted foliage. *Fl.* July, Aug. ♃.—*Root* a small, thick, fleshy stock, from which descend many fibres and which send forth creeping filiform runners. (*Mr. W. Wilson*). *Leaves* 2—3 inches long, a little recurved, formed of 2 parallel tubes or cells. *Scape* or almost *leafless stem*, flowering above water, a foot or more high, according to the depth of the water. *Flowers* pale blue, drooping; *fruit* erect.

31. PHYTEÚMA. *Linn.* Rampion.

Cor. rotate, in 5 deep segments. *Filaments* dilated at the base. *Stigma* 2—3 cleft. *Caps.* of 2—3 cells, bursting at the sides. (*Flowers in dense bracteated spikes or heads.*)—*Nat. Ord.* CAMPANULACEÆ. *Juss.*—Name, φυτευμα (the same as φυτον, a plant), given, *par excellence*, to some medicinal plant by the ancients, but which probably bore little or no relation with the present.

H. 1. P. *orbiculáre*, Linn. (*round-headed Rampion*); head of flowers roundish, radical leaves ovato-oblong petiolate crenate those of the stem as well as the bracteas lanceolate. *Engl. Bot. t.* 142. *Hook. in Fl. Lond. N. Series, t.* 56. *Engl. Fl. v. i. p.* 295.

Chalky soils, to the south of London, but rare. On the downs of Sussex and Hampshire; in Surry and Kent. *Fl.* Aug. ♃.—*Stem* 1 foot high. *Root-leaves* numerous, but often withering, while the stem is yet in perfection, as is the case with those of *Campanula rotundifolia: cauline* ones remote, gradually becoming smaller upwards. *Heads* of flowers of a most beautiful blue colour. The *capsules* too form a curious oval *head*, with the persistent calyces, each *calyx* spreading in a stellated manner.

2. P. *spicátum*, Linn. (*spiked Rampion*); flowers in an oblongo-cylindrical spike, radical leaves cordato-oblong petiolate somewhat doubly serrated, upper ones and bracteas linear-lanceolate short sessile. *Lindl. Syn. p.* 135. *Borrer in Engl. Bot. suppl. t.* 2598.

Woods, thickets, hedges, and fields recently cleared of wood, in several stations about Mayfield and Waldron, Sussex, *Mr. Borrer*. First detected in the former place in 1825 by the *Rev. Ralph Price*. *Fl.* June, July. ♃.—Formerly cultivated, and the *root* eaten as a salad or boiled. Much taller than the last. *Spike* of flowers 2—4 inches long, greenish-white. Upper part of the *stem* almost bare of *leaves*.

32. CAMPÁNULA. *Linn.* Bell-flower.

Cor. campanulate or subrotate, with 5 broad and shallow segments. *Filaments* dilated at the base. *Stigma* 2-5fid. *Caps.* 2—5 celled, bursting laterally, rarely at the extremity.—*Nat. Ord.* CAMPANULACEÆ. *Juss.*—Named from the usual form of the corolla, *Campana*, a *bell.*

* *Cor. campanulate. Capsule opening by lateral pores.*

H. 1. C. *rotúndifolia.* Linn. (*round-leaved Bell-flower or Hare-bell*); glabrous, root-leaves subrotundo-cordate crenate (very soon withering), those of the stem linear entire. *Engl. Bot. t.* 866. *Hook. Scot. i. p.* 76. *Engl. Fl. v. i. p.* 287.

Dry and hilly pastures, borders of fields, walls, &c. abundant, sometimes varying with white flowers. *Fl.* July, Sept. ♃. *Panicle* of few *flowers*, lax. *Flowers* drooping. Whole plant slender and graceful:

> "E'en the slight *Hare-bell* raised its head,
> Elastic from her airy tread."

2. C. *pátula*, Linn. (*spreading Bell-flower*); stem angular scabrous, leaves roughish dentato-crenate those of the root obovato-

lanceolate subpetiolate those of the stem linear-lanceolate, panicles spreading, calycine segments toothed, corolla spreading. *Engl. Bot. t.* 288. *Engl. Fl. v. i. p.* 288.

Pastures and hedges, chiefly confined to the middle and south-eastern counties of England, and there by no means frequent. *Fl.* July, Aug. ⊙. (♂. *Sm.*).—Somewhat allied to *C. rotundifolia*, but much taller, with more branched *panicles*, larger more spreading, more purple *flowers*, with rough stems and *leaves* and toothed or serrated *calycine segments.*

H. 3. C. *Rapúnculus*, Linn. (*Rampion Bell-flower*); stem somewhat angular hairy below, leaves roughish those of the root obovato-oblong stalked crenate upper ones narrow-lanceolate, panicle erect racemose, calycine segments entire, limb of the corolla patent. *Engl. Bot. t.* 283. *Hook. in Fl. Lond. N. Series, t.* 80. *Engl. Fl. v. i. p.* 289.

In Kent, Surrey, Norfolk and Hampshire, in a gravelly soil: and in several of the middle counties and as far north as Yorkshire. *Fl.* July, Aug. ♃.—Taller (2-3 feet high) more erect and less panicled than the last. *Flower* almost racemed, little spreading at the mouth, more truly campanulate. *Calycine segments* narrower and entire. The *roots* constitute *Ramps*, and used to be much cultivated for the table. Now they are principally confined to the kitchen-gardens of the curious.

4. C. *persicifólia*, Linn. (*Peach-leaved Bell-flower*); glabrous, stem rounded few-flowered, root-leaves obovate stalked crenate those of the stem linear-lanceolate subserrate sessile, calycine segments entire, corollas spreading. *Don, H. Br. Fasc. n.* 180. *Hook. Scot. i. p.* 74. *Engl. Fl. v. i. p.* 290.

Woods near Cullen, Scotland, apparently indigenous, *G. Don. Fl.* July. ♃.—*Corolla* large, spreading. In really wild specimens, the flowers are often solitary upon the stem.

H. 5. C. *latifólia*, Linn. (*Giant Bell-flower*); stem quite simple rounded, leaves ovato-lanceolate acute scabrous crenato-serrate, peduncles erect single-flowered, calyx glabrous its segments entire, fruit drooping. *Engl. Bot. t.* 302. *Hook. Scot. i. p.* 75. *Engl. Fl. v. i. p.* 290.

Moist shady woods. In Norfolk, Suffolk, Bedfordshire and Derbyshire; but rare; less unfrequent in the north of England, and very common in woody glens in Scotland. New-Ross, Ireland, *Mr. Mackay. Fl.* July, Aug. ♃.—Two—three feet high. *Corolla* very large, blue, often white in the Scottish woods. This is the finest and most stately of our species.

6. C. *rapunculoídes*, Linn. (*creeping Bell-flower*); stem slightly branched, leaves cordato-lanceolate scabrous crenate, flowers solitary unilateral drooping axillary forming a leafy raceme, segments of the calyx reflexed. *Engl. Bot. t.* 1369. *Hook. Scot. i. p.* 75. *Engl. Fl. v. i. p.* 291.

Woods and fields, rare. Oxfordshire (*Buddle's Herbarium*). On the magnesian limestone between Went-bridge and Darlington, Yorkshire, *Mr. James Backhouse.* Blair in Athol, Scotland; and found plentifully in cornfields 2 miles N.W. of Kirkcaldy, (where it is considered a troublesome weed by the farmers,) by the late *Alexander Chalmers, Esq.* an accomplished botanist and one of the most excellent of men. *Fl.* July, Aug. ♃.—Two feet high. *Leaves* gradually narrower in the upper part of the stem. *Flowers* large. *Calycine segments* entire, rough.

H. 7. C. *Trachélium*, Linn. (*Nettle-leaved Bell-flower*); hispid, stem angular, leaves petiolate cordate acuminate inciso-serrate, peduncles axillary few-flowered, calycine segments erect. *Engl. Bot. t.* 12. *Hook. Scot. i. p.* 75. *Engl. Fl. v. i. p.* 292.

Woods in England, frequent. Rare in Scotland: old walls of Mugdoch Castle, near Glasgow, *Mr. Hopkirk*. *Fl.* July, Aug. ♃.—*Leaves* much like those of the Nettle, whence its English name.

H. 8. C. *glomeráta*, Linn. (*clustered Bell-flower*); stem angular simple nearly smooth, leaves scabrous crenate oblongo-lanceolate, root-leaves petiolate those of the stem semiamplexicaul, flowers sessile mostly in a terminal cluster. *Engl. Bot. t.* 90. *Hook. Scot. i. p.* 75. *Engl. Fl. v. i. p.* 292.

In dry, principally chalky and clayey pastures, in England. Hilly pastures in Scotland; but confined, I believe, to the east side, between the Frith of Forth and Montrose. *Fl.* July, Aug. ♃.—Varying much in height, from 3 or 4 inches to a foot high. *Flowers* rather large, erect; the *petals* sometimes turning to a bunch of leaves, (*Prof. Henslow*). Many of the slight varieties of this plant are considered as species by the continental Botanists.

** *Corolla campanulate. Capsule opening at the free extremity, within the calycine segments.* (Wahlenbergia, *Schrad.*).

9. C. *hederácea*, Linn. (*Ivy-leaved Bell-flower*); stem weak filiform, leaves all stalked cordate angulato-dentate glabrous. *Engl. Bot. t.* 73. *Hook. in Fl. Lond. New Series, t.* 93. *Hook. Scot. i. p.* 75. *Engl. Fl. v. i. p.* 293.

In moist shady woods. Abundant in Devonshire, Cornwall, the Scilly Isles, and Wales. In Sussex (plentiful), Hampshire, Oxfordshire, Worcestershire, Essex. On the north bank of the Clyde, (*Dr. Brown*) whence it has been conveyed with the turf to grass-walks in the garden of Sir Michael Shaw Stewart of Ardgowan, where it was pointed out to me by my valued friend *D. Mathie, Esq.* County of Cork and other places in Ireland, *Mr. Mackay*. *Fl.* July, Aug. ♃.—A most graceful little plant, growing in lax tufts like the *Sibthorpia europæa*. *Peduncles* long, slender, mostly terminal. *Flowers* half an inch or more in length, at first drooping, then erect; pale purplish blue. *Fruit*, which I have on beautiful specimens communicated to me by Mr. W. Wilson from North Wales, an almost globose *capsule*, ¾ths adhering to the *calyx*, opening, not at the sides, but in the upper free part, between the persistent segments of the calyx. This is included in the genus *Wahlenbergia* of Schrad. But it has not the habit of the other *Wahlenbergiæ*, which are, as M. Alphonse de Candolle observed to me, all natives of the southern hemisphere. A Monograph of the *Campanulaceæ* is anxiously looked for from this gentleman, who has lately visited the Herbaria of this country with a view to gaining a more complete knowledge of the tribe.

*** *Corolla nearly rotate. Capsule triangular, opening by valves at the extremity on the outside, and between the segments of the calyx.* (Prismatocarpus, *L'Her. Lindl.*)

H. 10. C. *hýbrida*, Linn. (*Corn Bell-flower*); stem simple or often branched from the base, leaves oblong crenate waved, corolla widely spreading shorter than the calycine segments, capsule elongated triangular. *Engl. Bot. t.* 375. *Engl. Fl. v. i. p.* 293.

Corn-fields of a dry and chalky nature, chiefly confined to the middle and southern parts of England. *Fl.* Aug. ⊙.—Sir James Smith is of opinion that the beautiful *C. Speculum*, or *Venus' Looking-glass*, is the same species as this, with larger *flowers*. Be that as it may, although extremely common on the continent immediately upon crossing the British Channel, and a splendid ornament to the corn-fields there, it has never been found wild in England.

33. Lonicéra. *Linn.* Honey-suckle.

Cor. irregular. *Berry* 1—3-celled, many-seeded.—*Nat. Ord.* CAPRIFOLIACEÆ. *Juss.*—Name given in honour of *Adam Lonicer*, a German Botanist.

* *Climbing, flowers in whorled heads.* (Caprifolium, *Juss.*)

H. 1. L. *Caprifólium*, Linn. (*pale perfoliate Honey-suckle*); flowers ringent whorled terminal sessile, upper leaves connato-perfoliate. *Engl. Bot. t.* 325. *Hook. Scot. i. p.* 80. *Engl. Fl. v. i. p.* 326.

Woods and thickets, rare. Oxfordshire and Cambridgeshire. In Collinton woods and on Corstorphine hill near Edinburgh, and in hedges at Dalmeny, Linlithgowshire. *Fl.* June. ♄.—*Berries* smooth, of an orange-colour.

H. 2. L. *Periclýmenum*, Linn. (*common Honey-suckle or Woodbine*); flowers ringent capitate terminal, leaves all distinct. *Engl. Bot. t.* 800. *Hook. Scot. i. p.* 80. *Engl. Fl. v. i. p.* 396.

Frequent in woods and hedges;

> "And honey-suckle loves to crawl
> Up the low *crag* and ruined *wall.*"

Fl. June—Oct. ♄.—*Berries* red. The *stems* of this and the last species invariably twine in one and the same direction.

** *Erect, peduncles 2-flowered.* (Xylosteum, *Juss.*)

3. L. *Xylósteum*, Linn. (*upright Fly Honey-suckle*); peduncles 2-flowered, berries distinct, leaves ovate acuminate entire downy, *Engl. Bot. t.* 916. *Engl. Fl. v. i. p.* 326.

Thickets. Near Sewenshele, Northumberland, *Wallis.* Certainly wild near Houghton Bridge, 4 miles from Arundel, Sussex, *Mr. Borrer. Fl.* July. ♄.—An erect *shrub*, with pale yellowish, small, scentless *flowers* succeeded by bright scarlet *berries.*

**** *Perianth double, inferior. Corolla of 4 or 5 petals.* Gen. 35—38.

34. Rhámnus. *Linn.* Buckthorn.

Cal. urceolate, 4—5-cleft. *Petals* 4—5, sometimes wanting *Stamens* opposite the petals. *Berry* 2—4-celled, 2—4-seeded.—

Nat. Ord. Rhamneæ. *Juss.*—Name, ϱαμνος, in Greek, a *branch*, from its numerous branches.

H. 1. R. *cathárticus*, Linn. (*common Buckthorn*); spines terminal, flowers 4-cleft diœcious, leaves ovate sharply serrated. *Engl. Bot. t.* 1629. *Hook. Scot. i. p.* 80. *Engl. Fl. v. i. p.* 327.

Woods, hedges and thickets; not unfrequent in England. About Dumfries, in Scotland. Near Cork and Lough Earne, in Ireland, *Mr. J. T. Mackay. Fl.* May, June. ♄.—A spreading *shrub. Leaves* with 4 or 6 strong lateral nerves parallel with the margin or rib; *serratures* glandular. *Flowers* in dense fascicles. "In the barren flower the tube of the *cal.* is *campanulate*, the segments ovate, 3-ribbed. *Pet.* 4, oblongo-ovate, inserted below the mouth of the cal., alternate with its segments, *Stam.* inserted just below the petals: there is an abortive *germen* visible. In the *fertile* flower the *petals* are linear, incurved above. *Stam.* abortive. *Styles* 4, united half way up, spreading. *Stigmas* small, slightly decurrent along the inner edge of the styles. *Germen* superior." (*Wilson.*) *Berries* black, nauseous, powerfully cathartic. They afford a *yellow* dye in an unripe state; the bark a *green* dye. "*Seeds* ovate, acute at the lower extremity, rounded at the back, with two flat sides, forming the internal angle. *Embryo* with kidney-shaped *cotyledons*, laterally bent, surrounded by the *albumen*." (*Wilsón*).

H. 2. R. *Frángula*, Linn. (*Berry-bearing Alder or Alder Buckthorn*); unarmed, flowers perfect, leaves obovate entire. *Engl. Bot. t.* 250. *Hook. Scot. i. p.* 81. *Engl. Fl. v. i. p.* 328.

Woods and thickets in England. Near Auchincruive, Ayrshire, *Mr. Smith. Fl.* May. ♄.—A small *shrub. Flowers* pedunculate, axillary, somewhat fascicled, whitish-green. *Petals* very minute. *Berries* dark purple, with two *seeds*, purgative.

35. Euónymus. *Linn.* Spindle-tree.

Cal. flat, 4—5-cleft, having a peltate disk within. *Pet.* 4—5. *Stam.* alternating with the petals, inserted upon glands at the margin of the disk. *Caps.* with 3—5 angles, and as many cells and valves. *Seeds* with a coloured fleshy *arillus.*—*Nat. Ord.* Celastrineæ. *Br.*—Named from *Euonyme*, Mother to the Furies, in allusion to the injurious effects of the fruit produced by this plant.

1. E. *europǽus*, Linn. (*common Spindle-tree*); flowers mostly tetrandrous, petals acute, branches glabrous, leaves ovato-lanceolate minutely serrated. *Engl. Bot. t.* 362. *Hook. Scot. i. p.* 81. *Engl. Fl. v. i. p.* 329.

Woods and hedges; frequent in England; and in the south of Ireland, *Mr. Mackay:* rare in Scotland. King's Park, near Edinburgh, *Sibbald. Fl.* May. ♄.—*Shrub* 3—5 feet high. *Bark* green, smooth. *Leaves* glabrous. *Peduncle* bearing a few-flowered *Umbel. Flowers* small, white. *Fruit* obtusely angular, very beautiful, rose-coloured. *Arillus* orange coloured.—The *Berries* and even *leaves* are said to be dangerous, and the whole plant is fetid. Of the tough white wood, skewers and spindles are made, and Linnæus tells us it affords the best charcoal for drawing.

36. Impátiens. *Linn.* Balsam.

Cal. of 2, deciduous leaves. *Pet.* 4, very irregular, lower one cucullate with a spur. *Anthers* united. *Capsule* of 5, elastic valves.—*Nat. Ord.* Balsamineæ. *Rich.*—Name (*impatient*); from the sudden opening of the valves of the capsule, when the fruit is touched.

H. 1. I. *Noli-me-tangere*, Linn. (*yellow Balsam or Touch-me-not*); joints of the stem swelling, leaves ovate serrated petiolate, peduncles solitary many-flowered. *Engl. Bot. t.* 937. *Hook. Scot. i. p.* 76. *Engl. Fl. v. i. p.* 299.

Rare; moist shady woods in Yorkshire and Westmoreland. Guildford, Surrey, *Rev. L. Jenyns*. Abundant in a wet glen at Castlemilk, near Glasgow; but probably the outcast of a garden, *Mr. Hopkirk*. *Fl.* July, Aug. ⊙.—*Stem* 1 foot high, rounded, succulent, fragile. *Flowers* large, yellow, spotted with orange. *Capsule* bursting elastically and scattering its *seeds* with considerable force: the valves are then spirally twisted.

37. Víola. *Linn.* Violet.

Cal. of 5 leaves extended at the base. *Petals* 5, unequal, the under one spurred at the base. *Anthers* connate, two of them spurred behind. *Capsule* of 1 cell, and three valves.—*Nat. Ord.* Violarieæ. *D.C.*—Name :—Various are the Etymologies of this familiar word, for it is nearly the same in all languages. According to some from ιον, (being the food of the metamorphosed Io) the Greek appellation. "*A vi olendi*," (*from the power of its scent*), according to others. And again "quod juxta *vias* nasci amat;" because it loves to grow by *way-sides*, where it introduces itself to the notice of passengers. The reader may determine for himself.

* *Stemless, or nearly so.*

H. 1. V. *hírta*, Linn. (*hairy Violet*); leaves cordate rough as well as the petioles and capsules with hairs, calyx-leaves obtuse, lateral petals with a hairy central line, creeping scions none. *Engl. Bot. t.* 894. *Hook. Scot. i. p.* 76. *Engl. Fl. v. i. p.* 301.

Woods and pastures in England, principally in a chalky or limestone soil. Rare in Scotland, and, I believe, found only in the neighbourhood of Edinburgh. *Fl.* April, May. ♃.—*Stigma* an oblique point, in this and the 5 following species. *Flowers* pale, rather dingy blue, scentless. Nearly allied to *V. odorata;* distinguished, as Mr. Curtis well observed, by the short, not creeping *scions*, by the greater hairiness of the plant, and by the situation of the little *bracteæ* of the scape; here below, in *V. odorata* above the middle.[1]—*Mr. J. T. Mackay* has observed this species, immediately after flowering, to elongate its *flower-stalks*, which, taking a downward direction, bury the ripening *capsule* to the depth of 2—3 inches beneath the soil. The *flowers* of this and the following species are often destitute of petals, and yet bear fruit.

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[1] Mr. W. Wilson finds a monstrosity of a leaf of this species, bearing on its stalk two smaller petiolated leaves.

2. V. *odoráta*, Linn. (*sweet Violet*); leaves cordate and as well as the petioles nearly glabrous, calyx-leaves obtuse, lateral petals with a hairy line, scions creeping. *Engl. Bot. t.* 619. *Hook. Scot. i. p.* 77. *Engl. Fl. v. i. p.* 301. root acts as a powerful emetic. violine resembling emetine.

Woods, banks and pastures; frequent in England, very rare in Scotland. Near Slateford and Collinton woods, Edinburgh, *Greville*. Wood near the Castle Rock, Stirling, *Dr. Graham*. Hedges between Killiney hill and Bray, Ireland, *Mr. J. T. Mackay*. *Fl.* March, April. ♃.—*Flowers* deep purple, fragrant, often white; in many parts of Devonshire, in the stiff red soil about Torquay especially, I have seen them very commonly of a lilac colour. *Bracteas* inserted above the middle of the *scape*. Mr. W. Wilson observes that the hairs of the scapes and leaf-stalks are deflexed, which is not the case with *V. hirta*. The Sorbet of the Turks, according to Hasselquist, is prepared from these flowers and sugar. I do not know where the Highland ladies of former times obtained their *violets* to make a cosmetic. Yet it was known to them, if the following lines given by Lightfoot are correctly translated from the Gaelic; "Anoint thy face with goat's milk in which *Violets* have been infused, and there is not a young prince upon earth who will not be charmed with thy beauty."

H. 3. V. *palústris*, Linn. (*Marsh Violet*); leaves cordate or kidney shaped quite glabrous veiny beneath, spur very short, lateral petals scarcely hairy, scions none. *Engl. Bot. t.* 444. *Hook. Scot. i. p.* 77. *Engl. Fl. v. i. p.* 303.

Bogs and marshy grounds; less frequent in the south, abundant in the mountains of Scotland, and at a very considerable elevation. *Fl.* April—June, and even July in the colder regions. ♃.—*Flowers* very pale blue, with purple sheaths. The *petals* are slightly hairy on one side at the base, as Mr. W. Wilson well observes; the lateral ones not having a distinct line of hairs.

*** Furnished with an evident stem.*

H. 4. V. + *canína*, Linn. (*Dog's Violet*); stem at length ascending channelled, leaves cordate acute, leaflets of the calyx acuminate, stipules long ciliato-dentate, bracteas subulate entire. *Engl. Bot. t.* 620. *Hook. Scot. i. p.* 77. *Engl. Fl. v. i. p.* 303. β. V. flavicorn

Woods, banks and dry pastures, frequent, and in clefts of rocks upon the mountains at a considerable elevation. *Fl.* April—Aug. ♃.—Variable in regard to size; but, as it appears to me, very constant to the above characters. In mountainous situations, the blossoms are often numerous and large in proportion to the size of the plant. *Flowers* scentless, blue, purple or sometimes almost white. On the sandy Denes at Yarmouth, this plant is very small in all its parts, and becomes V. flavicorn

H. 5. V. *láctea*, Sm. (*Cream-coloured Violet*); stem ascending, leaves ovato-lanceolate glabrous, stipules dentate, calyx-leaflets acuminate. *Engl. Bot. t.* 445. *Hook. Scot. i. p.* 77. *Engl. Fl. v. i. p.* 303.

On mountains and boggy heaths. Near Tonbridge Wells, and in Cornwall. In Scotland, near Peebles. Brandon Mountain, Ireland, *Dr. Taylor*. *Fl.* May. ♃.—A small plant with narrower *leaves* than the last, almost lanceolate, and pale blue or almost white *flowers*. But it appears

+ used with milk as a cosmetic

very doubtful if it be really distinct. De Candolle makes it a var. of *V. montana* of Linn.: and it seems to agree also with *V. lancifolia* of Thore, which again De Candolle considers to belong to *V. pumila* of Villars.

H. 6. V. *flavicórnis*, Sm. (*Dwarf yellow-spurred Violet*); "stem itted/ ascending, woody somewhat angular much branched, leaves heart- 3d ed. shaped coriaceous smooth and even, stipules and bracteas fringed, calyx-leaves lanceolate."—*Sm. in Engl. Fl. v. i. p.* 305.—*V. canina, γ. Fl. Brit. p.* 247.—*V. canina, var. minor, Dill. in Ray Syn. p.* 364. *t.* 24. *f.* 1.

Pastures and banks, near Mitcham in Surrey and about Norwich, (*Engl. Fl.*) *Fl.* May, June. ♃.—Smith says this little plant is not uncommon, but that it is usually neglected as a var. of *V. canina*. It is probably the small state of *V. canina* above alluded to as growing on the Denes near Yarmouth.

7. V. *trícolor*, Linn. (*Pansy Violet or Heart's Ease*); mostly annual, stem angled branched, leaves oblong deeply crenate, stipules lyrate pinnatifid. *Engl. Bot. t.* 1287. *Hook. Scot. i. p.* 77. *Engl. Fl. v. i. p.* 305. Note 1. Stiefmütterchen of Germany

Banks and cultivated fields, frequent. *Fl.* the whole summer. ☉. ♂. or ♃. Extremely variable, especially in the size and colour of its *flowers*. *Stigma*, in this and the following species, capitate, obliquely perforated.

8. V. *lútea*, Huds. (*yellow Mountain Violet or yellow Pansy*); perennial, stem much branched at the base, leaves ovato-oblong crenate, stipules lyrate subpalmato-pinnatifid. *Engl. Bot. t.* 721. *Hook. Scot. i. p.* 77. *Engl. Fl. v. i. p.* 306.—*V. grandiflora, Huds. not Linn.*—*V. sudetica, Willd.*—*De Cand.* Note 2.

β. Flowers all purple. *V. amœna, Sym. Syn.*—*De Cand. Syn. v. i. p.* 302.

γ. Leaves broadly ovate subcoriaceous, flowers deep yellow.

Mountainous pastures; frequent in Wales, the north of England and Scotland: α and β. often growing together. γ. Isle of Arran, *Mr. S. Murray*. *Fl.* May—Sept. ♃.—The flowers are generally of a pale yellow or sulphur colour, much larger than in *V. tricolor*; often the upper *petals* are purple, and in β. all are purple. The var. γ. is a very singular one, discovered by Mr. Murray in Arran, and cultivated for many years in the Glasgow Bot. Garden. It forms a large dense tuft, and with its very numerous, broad dark green *leaves* and bright yellow *flowers*, makes a handsome appearance. Sir James Smith has well distinguished *V. lutea* from the *V. grandiflora* of Linn. by the shortness of its spur. But distinct as it probably is from *V. tricolor*, it is very difficult to define the characters in words.

***** *Perianth double, superior. Corolla of* 5 *petals.*

38. Ríbes. *Linn.* Currant and Gooseberry.

Cal. 5-cleft, bearing the *Petals* and the *Stamens*. *Style* divided. *Berry* 1-celled, many-seeded.—*Nat. Ord.* Grossularieæ. *De Cand.*—Name, *Ribes*, a word applied by the Arabic Physicians to a species of *Rhubarb*, *Rheum Ribes*. Our older Botanists believed that it was our *Gooseberry*; and hence Bauhin called that plant *Ribes acidum*.

Viola suavis - Note 5 -

Viola arvensis -

* *Without Thorns.*

H 1. R. *rúbrum*, Linn. (*common or red Currant);* without thorns erect, racemes glabrous pendulous, flowers nearly plane, petals obcordate. *Engl. Bot. t.* 1289. *Hook. Scot. i. p.* 81. *Engl. Fl. v. i. p.* 330.

Alpine woods: by the Tees-side in England. In Isla, one of the Hebrides, and about Culross in Scotland: not unfrequent in hedges, but scarcely wild in such situations. *Fl.* May. ♄.—*Leaves* 5-lobed, doubly serrated, on longish stalks. There is a small scale or bractea at the base of each pedicel. *Flowers* greenish. *Fruit* crowned, as in all the genus, with the withered flower, usually red, in gardens white and rose-coloured.

H. 2. R. *petræum*, Wulf. (*Rock Currant*); without thorns erect, racemes erect in flower, in fruit pendulous slightly downy, flowers nearly plane, petals bluntish, bracteas shorter than the pedicel. *Engl. Bot. t.* 705. *Hook. Scot. i. p.* 81. *Engl. Fl. v. i. p.* 331.

Woods in the north of England and Scotland. Eggleston and near Conscliffe, Durham. Near Airly Castle; and by the Spey side, at Aviemore, Scotland, *Rev. G. Gordon. Fl.* May, June. ♄.

3. R. *spicátum*, Robson, (*acid Mountain Currant*); without thorns, spikes upright in flower and in fruit, flowers nearly sessile, petals oblong, bracteas shorter than the flowers. *Robs. in Tr. of Linn. Soc. v. iii. p.* 240. *t.* 21. *Engl. Bot. t.* 1290. *Engl. Fl. v. i. p.* 331.

Woods near Richmond, Yorkshire, *Mr. G. Robson;* and formerly found near Gainsford, Durham. *Fl.* May. ♄.—A very dubious species, which I only know from the figures above quoted. said to be extinc

4. R. *alpínum*, Linn. (*tasteless Mountain Currant*); without thorns, racemes erect both in flower and fruit, flowers plane shorter than the bracteas, leaves shining beneath. *Engl. Bot. t.* 704. *Hook. Scot. i. p.* 81. *Engl. Fl. v. i. p.* 332.

Woods, in the north of England. About Bradford and Ripon, Yorkshire. Woods, and fissures of rocks, in Scotland, *Dr. Parsons.* Woods at Cadzow Castle, near Hamilton. *Fl.* May. ♄.—*Leaves* small, frequently 3-lobed; lobes acute, deeply serrated. *Racemes* few-flowered; *flowers* small. *Berries* red. Well distinguished by the length of its bracteæ.

5. R. *nígrum*, Linn. (*black Currant*); without thorns, racemes lax downy pendulous with a separate simple flower-stalk at their base, flowers campanulate, leaves dotted with glands beneath. *Engl. Bot. t.* 1291. *Hook. Scot. i. p.* 82. *Engl. Fl. v. i. p.* 332.

Woods and river-sides, in various situations. *Fl.* May. ♄.—*Berries* the largest of our Currants, black, much esteemed medicinally and for making jelly. The glands of the *leaves* yield a peculiar smell when bruised, which has been compared to that of *Savin, Juniperus Sabini.*

** *Thorny.*

H. 6. R. *Grossulária*, Linn. (*common Gooseberry*); branches thorny, leaves rounded and lobed, peduncles hairy single-flowered with a pair of minute bracteas, fruit more or less hairy. *Engl. Bot. t.* 1292. *Hook. Scot. i. p.* 82. *Engl. Fl. v. i. p.* 333.—*R. Uva crispa, Linn.*—*Engl. Bot. t.* 2057.

Hedges and thickets; scarcely an aboriginal native? Apparently indigenous in Hamilton woods, Scotland. *Fl.* April, May. ♄.—*Thorns* immediately beneath a fascicle of *leaves*, solitary, or 2—3 combined at the base, spreading. *Fruit* much esteemed in cool and temperate climates, where alone it comes to perfection; and varying exceedingly by cultivation, in size, colour, and flavour.

39. Hédera. *Linn.* Ivy.

Cal. of 5 teeth. *Petals* broadest at the base. *Style* simple. *Berry* with 3—5 *seeds*, crowned by the calyx.—*Nat. Ord.* Caprifoliaceæ. *Juss.*—Name of uncertain origin.

1. H. *Hélix*, Linn. (*common Ivy*); leaves ovate or cordate and 5-lobed lobes angular, umbel erect. *Engl. Bot. t.* 1267. *Hook. Scot. i. p.* 82. *Engl. Fl. v. i. p.* 334.

Hedges, woods, old buildings, or rocks and trunks of trees, frequent. *Fl.* Oct. Nov. ♄.—*Stems* very long, creeping, throwing out numerous *roots*, by which they adhere to hard substances. *Leaves* very shining, dark green, often veined with whitish lines. *Flowers* small, pale green. *Cal.* teeth very minute. *Petals* reflexed. *Berries* smooth and black.—A variety called the *Irish Ivy* is much cultivated on account of the vastly larger size of its foliage, and very rapid growth.—The *Ivy* is the badge of the Scottish Clan *Gordon.*

****** *Flowers incomplete.*

40. Glaúx. *Linn.* Sea-Milkwort.

Perianth single, inferior, campanulate, coloured, of 1 piece, 5-lobed. *Caps.* globose, 1-celled, 5-valved, with about 5 *seeds.*—*Nat. Ord.* Primulaceæ. *Vent.*—Name from γλαυκιον, given to a plant of a sea-green colour, or because it grew near the sea.

H. 1. G. *marítima*, Linn. (*common Sea-Milkwort, or black Saltwort*). *Engl. Bot. t.* 13. *Hook. Scot. i. p.* 82. *Engl. Fl. v. i. p.* 336.

Sea-shore and muddy salt-marshes, abundant. *Fl.* July. ♃.—*Stems* 2—4 or 5 inches long, stout, branched, often procumbent. *Leaves* opposite, ovate, glabrous, fleshy, entire, sessile, small. *Flowers* sessile, solitary, axillary, rose-coloured, with 5, obtuse, spreading lobes.

41. Illécebrum. *Linn.* Knot-grass.

Cal. of 5 leaves, cartilaginous, subcucullate, ending in an awl-shaped point. *Pet.* 0, or reduced to 5, subulate *scales*. *Capsule* superior, with one *seed*, covered by the calyx.—*Nat. Ord.* Paronychiæ. *St. Hil.*—Name, *illecebra*, an *enticement* or *attraction*, anciently given to a showy tribe of plants, now confined to a genus possessing few charms.

1. I. *verticillátum*, Linn. (*whorled Knot-grass*); stems procumbent filiform glabrous, leaves broadly ovate, flowers axillary in crowded whorls. *Engl. Bot. t.* 895. *Engl. Fl. v. i. p.* 355.

Marshy or boggy ground, in Devonshire and Cornwall. Base of a hill at the race-course, Truro. *Rev. J. S. Tozer.* *Fl.* July. ♃.—A small plant, with spreading and procumbent filiform *stems*, white scariose stipules jagged at the margin, and numerous whitish *flowers.*

42. THÉSIUM. *Linn.* Bastard Toad-flax.

Perianth 4—5 cleft, persistent. *Stam.* with a small fascicle of hairs. *Nut* inferior, somewhat drupaceous.—*Nat. Ord.* SANTALACEÆ. *Br.*—Name doubtful in its origin.

1. T. *linophýllum*, Linn. (*flax-leaved Bastard-Toadflax*); leaves linear-lanceolate, racemes panicled leafy, peduncles and pedicels bracteated, fruit nearly globose. *Engl. Bot. t.* 247. *Engl. Fl. v. i. p.* 337.

Elevated chalky pastures, Cambridgeshire, Norfolk, Suffolk and Dorsetshire. *Fl.* July. ♃.—*Roots* woody, sending forth several herbaceous, spreading, leafy *stems*, terminated by the somewhat paniculated leafy *racemes.* Segment of the *perianth* white. *Fruit* strongly ribbed.

ORD. II. DIGYNIA. 2 *Styles.*

* *Perianth double, inferior. Cor. monopetalous.*

43. SWÉRTIA. *Linn.* Felwort.

Cal. 4—5 partite. *Cor.* rotate, with 2 nectariferous glands at the base of each segment. *Caps.* 1-celled, 2-valved.—*Nat. Ord.* GENTIANEÆ. *Juss.*—Named after *Emmanuel Swert*, a Dutch botanist, who published a Florilegium in 1612.

1. S. *perénnis*, Linn. (*Marsh Felwort* or *Swertia*); radical leaves ovate attenuated at each extremity nerved, peduncles corymbose, segments of the corolla lanceolate acute. *Engl. Bot. t.* 1441. *Engl. Fl. v. ii. p.* 26.

Wales, *Dr. Richardson*, according to *Hudson.* But there is reason to apprehend some mistake, and that it was never found wild in Britain. *Fl.* Aug. ♃.

44. GENTIÁNA. *Linn.* Gentian.

Cal. 4—5 cleft. *Cor.* subcampanulate, funnel or salver-shaped, tubular at the base, destitute of nectariferous glands. *Styles* often combined. *Caps.* of 1 cell, 2-valved.—*Nat. Ord.* GENTIANEÆ. *Juss.*—Named from *Gentius*, King of Illyria, who according to Pliny, brought into use the species that is so much valued in medicine as the *bitter Gentian, G. lutea.*

* *Cor. subcampanulate, the mouth naked.*

1. G. *acaúlis*, Linn. (*dwarf Gentian*); leaves oblongo-lanceolate acute, flower solitary 5-cleft about as long as the quadrangular stem. *Engl. Bot. t.* 1594. *Engl. Fl. v. ii. p.* 28.

Near Haverwood West. *M. de St. Amans*; assuredly the outcast of a garden. *Fl.* June, July. ♃.

H. 2. G. *Pneumonánthe*, Linn. (*Marsh Gentian*); leaves linear, flowers terminal and axillary sessile, corolla 5-cleft. *Engl. Bot. t.* 28. *Engl. Fl. v. ii. p.* 27.

Moist heathy places in several parts of England. *Fl.* Aug. ⊙. Sept. ♃.—Upright *stem*, 4 to 6 or 8 inches tall. *Corolla* large, deep blue within, having 5 broad greenish lines corresponding with the segments.

** *Cor. somewhat funnel or salver-shaped, with 5 large and 5 smaller segments.*

3. G. *vérna*, Linn. (*Spring Gentian*); stem 1-flowered, leaves crowded ovate, corolla salver-shaped with 5 large and 5 small alternate bifid segments. *Engl. Bot. p.* 493. *Engl. Fl. v. ii. p.* 29.

Alpine pastures, rare; between Gort and Galway, Ireland, *Mr. Heaton:* on limestone rocks in the Barony of Burren in the same country, *Mr. J. T. Mackay.* Middleton in Teesdale, Durham. *Rev. J. Harriman. Fl.* April. ♃.

H. 4. G. *nivális*, Linn. (*small alpine Gentian*); branches single-flowered, leaves elliptical, corolla salver-shaped 5-cleft with intermediate small bifid segments, angles of the calyx acute (brown.) *Engl. Bot. t.* 896. *Hook. Scot. i. p.* 86. *Engl. Fl. v. ii. p.* 29.

Exceedingly rare, having only been found on Ben ~~Nevis~~ by *Mr.* Lawers. *Dickson*, and since by *Mr. G. Don* and *Mr. W. Wilson. Fl.* Aug. ⊙.—This rare and beautiful little alpine plant was supposed to be lost to this country, till Mr. Wilson found it again on Ben Lawers, in August, 1827; but so rare is it that after the most diligent search, he could only gather two specimens.

*** *Cor.* 4—5-*cleft, somewhat salver-shaped, fringed at the throat.*

H. 5. G. *Amarélla*, Linn. (*autumnal Gentian*); stem very much branched many-flowered, leaves ovato-lanceolate, calycine segments nearly equal, corolla 5-cleft. *Engl. Bot. t.* 236. *Hook. Scot. i. p.* 86. *Engl. Fl. v. ii. p.* 30.

Pastures, particularly in subalpine situations, England, Scotland, and Ireland: especially abundant in limestone countries. *Fl.* Apr.—June, and often through the whole summer and autumn. ⊙.—From 3 inches to a foot high, branched from the base and covered of *flowers* of a pale rather dingy purple. "Fringe under the mouth of the corolla a beautiful object beneath the microscope; the rays tapering, and covered with prominent dots." *Mr. W. Wilson.*

H. 6. G. *campéstris*, Linn. (*Field Gentian*); stem very much branched many-flowered, leaves ovato-lanceolate, 2 outer segments of the calyx very large ovate, corolla 4-cleft. *Engl. Bot. t.* 237. *Hook. Scot. i. p.* 86. *Engl. Fl. v. ii. p.* 31.

Hilly pastures, frequent on a limestone or chalky soil in England and Ireland. Abundant in Scotland, especially near the sea. *Fl.* Aug.—Oct. ⊙.—Very similar to the last in general habit: but with larger *flowers*, and these so numerous in specimens gathered on the Isle of Skye, that I counted 86 on one plant. All the *Gentians* contain the bitter principle abundantly; this particular species is said to be used by the poor in Sweden in lieu of hops.

45. Cúscuta. *Linn.* Dodder.

Cal. 4—5 cleft. *Cor.* campanulate, 4—5-lobed. *Caps.* bursting all round transversely at the base, 2-celled, with the cells 2-seeded.—*Parasitical leafless* plants, *with long twining filiform* stems.—*Nat. Ord.* Convolvulaceæ. *Juss.*—Name, the same as *κασσυθα,* probably from the Arabic *Keshout.* (*Théis.*)

1. C. *europǽa,* Linn. (*greater Dodder*); flowers sessile, corolla 4—5 cleft without any scale at the base of the stamens, stigma simple. *Engl. Bot. t.* 378. (*not t.* 55.) *Hook. Scot. i. p.* 86. *Hook. in Fl. Lond. t.* 67. *Engl. Fl. v. ii. p.* 24.

Parasitical on nettles, flax, &c.; scarce, yet found in several counties of England and Scotland, and in Ireland, *Mr. J. T. Mackay. Fl.* Aug. Sept. ⊙.—*Stems* very large, red, having small tubercles and papillæ, which act as *roots. Flowers* clustered, of a pale yellowish rose colour.

H. 2. C. *Epíthymum,* Linn. (*lesser Dodder*); flowers sessile, corolla mostly 4-cleft with a small fringed scale at the base of each stamen, stigma simple. *Engl. Bot. t.* 55. (*C. Epithymum*) *and at t.* 378. *Hook. Scot. i. p.* 86. *Engl. Fl. v. ii. p.* 25.

Frequent on Furze, Heath and Thyme, in exposed situations in England and Scotland. *Fl.* July, Aug. ⊙. (♃? Sm.)—Smaller than the last, especially in the *flowers,* and well distinguished by the presence of the scales.

** *Perianth double,*[1] *superior, Petals* 5. *Seeds* 2.—*Nat. Ord.* Umbelliferæ. *Gen.* 46—84.

This is so extensive and so perfectly natural a groupe, and the genera which compose it are with so much difficulty distinguished the one from the other, that I shall here offer a few remarks, with a view to render the study of them more easy to the young botanist. All our Umbelliferous plants are herbaceous; they have *leaves* which are alternate, mostly very compound, with dilated and sheathing bases. But what characterizes them best, and gives the name to the Natural Family, is the circumstance of the *flowers,* in almost every instance, being arranged in compound *umbels,* with or without *Involucres.* The *Germen* is inferior, (enveloped by, and adherent with, the tube of the calyx,) 2-celled, presenting just below where the petals are inserted, a thickened margin, or sometimes teeth or segments, the only free part of the calyx. There are 5 *Petals,* entire or heart-shaped, often bifid, and with an incurved point between the 2 lobes, equal or unequal. *Stam.* 5, spreading: these, as well as the petals, are inserted upon a fleshy gland or ring, which is more or less covered by the dilated base of the styles. *Styles* 2, united at their base into a 2-lobed, fleshy disk, which covers the top of the germen. *Stigma* capitate. *Fruit* of 2, single-seeded, indehiscent *Pericarps,* or *carpels,* as they may be conveniently called, eventually separating, each with its style, and for a time suspended by a central, filiform, and generally bipartite *column* or *axis.* They are variously shaped, and variously marked with longitudinal *ridges*. The number of these ridges upon each *carpel* is 5, more or less apparent, sometimes obliterated, separated by *interstices*, which are more or less prominent. Of these *ridges*, so important in distinguishing the generic characters, *one* occupies the middle of the back, *one* is situated on each side, at or near the margins, and there is *one* on each side, between the marginal ones and the dorsal one; the *latter*, the *intermediate* ones, together with the *central* one, constitute the 3 *dorsal* ones. These 5 are the *primary* ridges; because they are always, however indistinctly, present. The *lateral* ridges form either in themselves the margins of the carpels, when they are termed *marginal;* or they project to a little distance from the margins, when they may be considered accessory; or they may be situated on the plane, or inner face of the carpels, and can then only be seen by separating the two carpels. Between the primary ridges are sometimes 4 others, (*secondary*,) one in each interstice. Within the coat of the carpels are often longitudinal ducts, or canals, filiform or clavate, replete with an oily or resinous substance, and generally coloured; so that they are frequently visible without dissection. These are called *vittæ*, and rank next to the ridges in discriminating genera. They seem to be tolerably constant in each genus, as to the number of them lodged in the interstices, between the ridges; but on the inner face of the carpels, they are inconstant. The arrangement of the Umbelliferæ which I have here adopted, is almost entirely that of Dr. Koch, in the *Nova Acta Acad. Naturæ Curiosorum*, for 1824. With regard to all previous ones, experience has proved that they are unnatural, and practically of little use. Sprengel & Smith have indeed made great improvements in the formation of the genera, and the arrangement of the latter I was particularly anxious to have adopted in a British Flora. But after carefully comparing it with that of Koch, I could not hesitate in assigning a preference to the latter. The parts on which the marks of distinction depend are assuredly minute, and in vain will the student hope to make himself master of this extensive and important tribe of plants, without devoting his earnest attention to the subject, and carefully analysing the parts of the flowers and fruit.

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[1] In this *Division,* so much of the calyx is incorporated with the germen, and so minute are the segments, or free portions, that at first sight, (as in the 2d *Div.* of the Cl. IV. p. 61.) it appears as if the petals only were present.

Synoptical Table of the Tribes, taken from the Fruit and Seed.

Seed inflexed at the margin, or deeply furrowed in front.	
Primary lateral ridges on the inner face of the carpels,	II. CAUCALIS *Tribe.*
Primary lateral ridges marginal.	
Fruit turgid,	X. SMYRNIUM *Tribe.*
Fruit elongated,	IX. SCANDIX *Tribe.*
Seed plane in front, or nearly so.	
Carpels with primary and secondary ridges.	
Lateral primary ridges on the inner face of the carpels,	I. DAUCUS *Tribe.*
Lateral primary ridges on the accessory border,	III. CORIANDRUM *Tribe.*
Carpels with 5 primary ridges only, or only with ridges at the extremity.	
Fruit dorsally compressed.	
With two wings on each side,	VI. ANGELICA *Tribe.*
With one wing on each side.	
Wing beaded, or folded and thickened,	IV. TORDYLIUM *Tribe.*
Wing even, flat, or slightly thickened,	V. SELINUM *Tribe.*

Fruit subterete,[1] *or slightly laterally compressed.*
Umbels perfect, - - - VII. Seseli *Tribe.*
Umbels imperfect, - - - XI. Sanicula *Tribe.*
Fruit remarkably laterally compressed.
Umbels perfect, - - - VIII. Ammi *Tribe.*
Umbels imperfect, - - - XII. Hydrocotyle *Tribe.*

A. *Umbels perfect. Carpels with many ridges, namely, 5 primary, and 4 secondary ones.* (Tribe I—III.)

(I. DAUCUS *TRIBE.*)

46. Daúcus. Linn. *Carrot.*

Cal. of 5 teeth. *Pet.* obcordate, point inflexed; the outer often radiant and deeply bifid. *Fruit* dorsally compressed. *Carpels* with 5 primary *ridges*, filiform and bristly, of which the 3 intermediate ones are dorsal, the 2 lateral ones on the inner face; the 4 *secondary* ridges equal, more prominent, with one row of prickles, which are slightly connected at the base. *Interstices* under the secondary ridges, with single *vittæ*. *Seed* plane in front.—Universal *and* partial involucre *many leaved, the former often primary.*—Name, the δαυκος of Dioscorides.

H. 1. D. *Caróta*, Linn. (*wild Carrot*); bristles of the seed slender, leaves tripinnate leaflets pinnatifid segments linear-lanceolate acute, umbels with a solitary coloured abortive flower in the centre, when in seed concave. *Engl. Bot. t.* 1174. *Hook. Scot. i. p.* 88. *Engl. Fl. v. ii. p.* 39.

Pastures, and borders of fields, very frequent. *Fl.* July. ♂.—This is the origin of our *garden Carrot,* a name derived, as Théis tells us, from *Car*, red, in Celtic, whence also comes *Garance*, the French name for the red Madder roots, and our word *carmine*, also, as I presume. Prof. Henslow finds a var. with viviparous fl., near Cambridge.

2. D. *marítima*, With. (*Sea-side Carrot*); bristles of the seed flattened, leaves tripinnate, leaflets pinnatifid lanceolate fleshy, segments rounded, umbels destitute of abortive floret, convex when in seed. *Engl. Bot. t.* 2560. *Engl. Fl. v. ii. p.* 40.—*D. Carota,* γ. *Fl. Brit. p.* 300. *Spreng.*

Sea coast of Kent and Cornwall. Anglesea, *Mr. W. Wilson*. Island of Lismore, Scotland, *Rev. C. Smyth.* Ireland, *Mr. J. T. Mackay.*—*Fl.* July, Aug. ♂.—Smaller than the preceding, with broader and more fleshy *leaves*, but I fear scarcely permanently distinct.

(II. CAUCALIS *TRIBE.*)

47. Caúcalis. Linn. *Bur-Parsley.*

Cal. of 5 teeth. *Pet.* obcordate, point inflexed, outer ones radiant and deeply bifid. *Fruit* slightly laterally compressed. *Carpels* with 5 primary, filiform, bristly or prickly *ridges*, of which the

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[1] By the word *terete*, I mean that the fruit presents nearly a circle, on a transverse section.

3 intermediate ones are dorsal, having 1—3 rows of prickles, the 2 lateral ones on the inner face, the 4 secondary *ridges* more or less prominent, bearing 1 or 2 rows of prickles. *Interstices* under the secondary ridges, with single *vittæ*. *Seed* involute.—*Universal and* partial involucres *many-leaved*.—Name from κεω, *to lye along*, and καυλος, *a stem*, trailing upon the ground.

H. 1. C. *daúcoides*, Linn. (*small Bur-Parsley*); leaves bi-tripinnatifid segments short, umbels of few rays, general involucre none, partial umbels of few flowers, their involucres of about 3 small leaves. *Engl. Bot. t.* 197. *Engl. Fl. v. ii. p.* 41.

Cornfields, on a chalky soil, principally in the east and south-east of England.—*Fl.* June. ⊙.—*Peduncles* lateral and terminal.

2. C. *látifolia*, Linn. (*great Bur-Parsley*), hispid, leaves pinnate, leaflets decurrent pinnatifid and serrate, involucres ovate membranous. *Engl. Bot. t.* 198. *Engl. Fl. v. ii. p.* 41.—*Turgenia latifolia*, *Koch.*—*Tordylium*, *Linn.*

Fields in a chalky soil, rare; abundant in Cambridgeshire.—*Fl.* July. ⊙. A very striking plant, and entirely different from the preceding. *Leaves* broad for this tribe of *Umbelliferæ*, and comparatively little divided. *Flowers* rose-coloured, large; *fruit* large and abundantly aculeated.

48. TORÍLIS. *Adans.* Hedge-Parsley.

Cal. of 5 teeth. *Pet.* obcordate, point inflexed: outer ones larger and bifid. *Fruit* contracted at the side. *Carpels* with 5 primary bristly *ridges*, of which the 3 intermediate ones are dorsal, the 2 lateral ones on the inner face, the secondary ridges obliterated by the numerous prickles which fill the interstices. *Interstices* with single *vittæ* beneath the prickles.[1] *Seed* with the margin involute. Involucre *various*; partial *of many leaves*.—Name of doubtful derivation; perhaps, as Smith suggests, from τορευω, to *carve* or *emboss*, in allusion to the fruit.

H. 1. T. *Anthríscus*, Gærtn. (*upright Hedge-Parsley*); stem erect branched, leaves bipinnate, leaflets lanceolate inciso-serrate attenuate, umbels terminal, involucres of many small subulate leaves. *Engl. Fl. v. ii. p.* 48.—*Caucalis Anthriscus*, *Huds.*—*Engl. Bot. t.* 987. *Hook. Scot. i. p.* 87.

Hedges and waste places. *Fl.* July. ⊙. *Stems* 2—3 feet high. *Fruit* densely clothed with incurved bristles.

H. 2. T. *inféesta*, Spr. (*spreading Hedge-Parsley*); leaves bipinnate, leaflets ovate inciso-pinnatifid serrated, general involucre none, partial of few subulate leaves. *Engl. Fl. v. ii. p.* 43.—*Caucalis infesta*,

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[1] From the dense prickles of the interstices, the whole fruit appears to be covered with prickles without order; but such is seen not to be the case when the fruit is attentively examined.

Curt.—*Engl. Bot. t.* 1314. *Hook. Scot. i. p.* 87.—*C. helvetica, Gmel.*—*Spreng.*

Fields and way-sides, common. *Fl.* July. ⊙.

H. 3. T. *nodósa*, Gærtn. (*knotted Hedge-Parsley*); stem prostrate, umbels lateral simple subsessile, fruit sometimes warted. *Engl. Fl. v. ii. p.* 44.—*Caucalis nodosa, Engl. Bot. t.* 199. *Hook. Scot. i. p.* 88.—*Tordylium nodosum, Linn.*

Waste places by road-sides, frequent; especially in dry, gravelly or chalky soils. *Fl.* May, June. ⊙.—*Leaves* bipinnate, leaflets ovate, pinnatifid, segments linear, acute, short. *Umbels* capitate, opposite the base of a leaf. *Flowers* reddish. *External fruits* of the umbel most bristly, *inner* ones partially tubercled.

(III. CORIANDRUM *TRIBE.*)

49. Coriándrum. *Linn.* Coriander.

Cal. of 5 teeth. *Pet.* obcordate, point inflexed, outer ones radiant, bifid. *Fruit* globose. *Carpels* with 5 primary *ridges* depressed and wavy, of which the 2 lateral ones are placed in front of an accessory margin to the inner face: the 4 secondary ridges more prominent and carinated. *Interstices* without *vittæ*, the inner face of the carpel having 2 *vittæ*. *Seed* hollowed in front, covered by a loose membrane.—Universal involucre 0. Partial *on one side.* Carpels *cohering, separated with difficulty.*—Name from κορις, *a Bug*, in allusion to the intolerably fetid smell of the bruised foliage. Sir J. E. Smith retains in this genus the *Biforis* of Spreng. which has a fruit of 2 lobes.

1. C. *sativum*, Linn. (*common Coriander*). *Engl. Bot. t.* 67. *Engl. Fl. v. ii. p.* 67.

Fields and waste places, about Ipswich and in Essex, in the neighbourhood of which it had formerly been cultivated. *Fl.* June. ⊙.—This is the only true species of the genus, and is well known as a medicinal plant. The *seeds* are highly aromatic, and sold enveloped in sugar as *Coriander comfits*. *Stem* erect, leafy. *Lower leaves* bipinnate, the pinnæ pinnatifid with broad, wedge-shaped, toothed segments: the upper leaves gradually more compound, with the segments very narrow and linear, those of the uppermost leaves almost setaceous. *Fruit* very curious: each *carpel* is hemisphærical; on its inner and flat side having a projecting margin, which combines with the opposite one so as to leave no line or furrow between the two, and they form a complete little ball or globe; having, however, when quite ripe, 10 obscure elevated lines or ribs.

B. *Umbels perfect. Carpels with few ridges: namely,* 5 *primary ones, secondary ones* 0, *or with primary ones even obliterated, and only apparent at the extremity.* (Tribe IV—X.)

(IV. TORDYLIUM *TRIBE.*)

50. Tordýlium. *Linn.* Hart-wort.

Cal. of 5 teeth. *Pet.* obcordate, point inflexed, outer ones radiant, bifid. *Fruit* remarkably compressed dorsally, with an accessory, thick, often crenated margin. *Carpels* with very slender *ridges*, 3 of which are dorsal and equidistant, the 2 lateral ones contiguous to the thickened margin. *Interstices* with one or 3 *vittæ*. *Seed* flat.—Universal *and* partial involucres *of many leaves*.—Name, according to Linnæus, derived from τορνος a *turning lathe*, and ελλω *to turn*; from the nearly orbicular seed vessels. All that we can say with certainty, is, that it is the τορδυλιον of the Greeks.

1. T. *officinále*, Linn. (*small Hart-wort*); 2 outer petals of the flowers of the ray each with one very large lobe, involucres setaceous as long as the umbels, fruit with the thickened border beautifully crenated and glabrous. *Engl. Bot. t.* 2440. *Engl. Fl. v. ii. p.* 114.—*Condylocarpus*, *Koch.*

Near London? *Ray* and *Petiver*. *Fl.* June, July. ⊙.—Hairy, 1 foot high: *leaflets* few, ovate, lobed and notched, upper ones confluent. *Flowers* beautiful, with the outer large lobes of the *petals* white. *Fruit* rough on the surface, with a very thick, pale, deeply notched or almost beaded border.

2. T. *máximum*, Linn. (*great Hart-wort*); 2 outer petals of the flowers of the ray each with 2 equal lobes, involucre linear shorter than the umbel, fruit with the thickened border scarcely notched and as well as the disk rough with appressed hairs. *Engl. Bot. t.* 1173. *Engl. Fl. v. ii. p.* 105.

Rare in waste ground, about London, Oxford, and Eton.—*Fl.* June, July. ⊙.—Much taller than the last, but with a greater number of more lanceolate leaflets. *Involucre* very short. *Petals*, all, comparatively, small, rose-coloured.

(V. SELINUM *TRIBE*. Gen. 51—53.)

51. HERÁCLEUM. *Linn.* Cow-Parsnep.

Cal. of 5 teeth. *Pet.* obcordate, point inflexed, outer ones often radiant. *Fruit* remarkably and dorsally compressed, with a broad and plane border. *Carpels* with very slender *ridges*, 3 of them dorsal, equidistant, 2 lateral ones remote, contiguous with the border. *Interstices* with single (evident) club-shaped *vittæ*.—*Seed* flat.—Universal involucre *deciduous*, partial *of many leaves*.—Named after Hercules, who is said to have brought this, or some allied plant, into use.

H. 1. H. *Sphondýlium*,[1] Linn. (*common Cow-parsnep or Hogweed*,) leaves pinnated rough hairy, leaflets pinnatifid cut sinuated upper one somewhat palmated, petals unequal, fruit glabrous. *Engl. Bot. t.* 939. *Hook. Scot. i. p.* 89. *Engl. Fl. v. ii. p.* 102.

β. leaves more deeply cut, lobes narrower. *Engl. Fl. v. ii. p.* 102. *H. angustifolium*, *Sm. Fl. Brit. p.* 307. *Jacq. Austr. v. ii. t.* 173. (not Linn.)

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[1] From σπουδυλος, the *vertebræ* of the back, to which the jointed stems were fancied to bear some resemblance.

Hedges, pastures and bushy places, frequent. *Fl.* July. ♂.—A coarse rank weed, 4—5 feet high. *Leaves* largely serrated, sheaths inflated. Hogs are fond of this plant, and it is said to be wholesome and nourishing for cattle in general.

52. PASTINÁCA. *Linn.* Parsnep.

Cal. nearly obsolete. *Pet.* roundish, entire, involute with a sharp point. *Fruit* much compressed dorsally, with a broad flat border. *Carpels* with very slender *ridges*, the 3 intermediate ones equidistant, the two lateral ones remote, contiguous to the border. *Interstices* with single evident *vittæ*. *Seed* flat.—Universal *and* partial involucres *of few leaves.*—Different from *Heracleum* in the entire, involute petals, and filiform, not clubbed, vittæ; in the remote lateral ridges from all the rest of this Tribe; and from *Peucedanum* also by the involute petals.—Name derived from *pastus*, *food.*

1. P. *satíva*, Linn. (*common wild Parsnep*); leaves pinnate downy beneath, leaflets ovate cut and serrated ultimate one 3-lobed. *Engl. Bot. t.* 556. *Engl. Fl. v. ii. p.* 101.

Borders of fields and pastures in a chalky soil. About Cambridge, *Rev. Prof. Henslow.* Crosby, by Liverpool, *Mr. W. Wilson.* *Fl.* July. ♂. —*Root* fusiform; the origin of our garden *Parsnep.* *Leaves* generally shining. *Petals* very convex, yellow, involute.

53. PEUCÉDANUM. *Linn.* Hog's Fennel.

Cal. of 5 teeth, or obsolete. *Pet.* obovate or obcordate, point inflexed. *Fruit* much flattened dorsally, with a broad thin margin. *Carpels* with the *ridges* nearly equidistant, the 3 intermediate ones filiform, the 2 lateral ones more obsolete, contiguous to or combined with the margin. *Seed* flat on its inner face. *Interstices* with single *vittæ.*—Universal involucre *various;* partial *of many leaves.* —Name from πευκη, a *Pine tree*, and δανος, *dwarf*, on account of a resinous substance, said to be extracted from some of the species.

1. P. *officinále*, Linn. (*Sea Hog's Fennel*, or *Sea Sulphur-weed*); leaves 5 times tripartite, leaflets linear-filiform flaccid, involucres few linear deciduous. *Engl. Bot. t.* 1767. *Engl. Fl. v. ii. p.* 99.

In salt marshes, very rare. In Kent and Sussex. *Fl.* July—Sept. ♃. —Remarkable for its large umbels of yellow *flowers*, and its long and extremely narrow leaflets. The whole plant, especially the *root*, has a strong sulphureous smell, and the latter yields a resinous substance, reckoned stimulant, but of dangerous internal use.

2. P. *palústre*, Mœnch, (*Marsh Hog's Fennel, or Milk Parsley*); milky, leaves ternately decompound, leaflets opposite pinnatifid segments linear-lanceolate with a hard point, rays of the umbel rough, involucres of many persistent lanceolate leaves.—*Selinum palustre*, *Engl. Bot. t.* 229. *Hook. Scot. i. p.* 88. *Engl. Fl. v. ii. p.* 97.

Marshy and boggy places, but apparently very local. Yorkshire and

Lancashire, about Norwich and the Isle of Ely. Ardincaple on the Clyde, *Mr. Hopkirk. Fl.* July. ♃ or ♂.—4—5 feet high, with very compound *leaves,* abounding in a milky juice, which dries to a brown resin. The *root* is said to be used by the Russians instead of Ginger.

3. P. *Ostrúthium,* Koch, (*broad-leaved Hog's Fennel* or *Master-Wort*)*;* leaves biternate, leaflets broadly ovate lobed inciso-serrate unequal at the base, sheaths very large, fruit with a very broad margin, universal involucre none. *Lindl. Syn.* p. 116.—*Imperatoria Ostruthium, Linn.—Engl. Bot. t.* 1380. *Hook. Scot. i. p.* 94. *Engl. Fl. v. ii. p.* 78.

Moist pastures, and in various parts of Scotland, but generally in suspicious places, as the plant was formerly much cultivated as a pot-herb. *Fl.* June. ♃.—*Flowers* white. *Partial involucres* several, subulate.

(VI. ANGELICA *TRIBE.*)

54. Angélica, *Linn.* Angelica.

Cal. obsolete. *Pet.* elliptical-lanceolate, entire and inflexed at the point. *Fruit* subcompressed, 2-winged. *Carpels* with 3 elevated dorsal *ridges,* the lateral ones spreading into the broad wings of the fruit. *Vittæ* various.—*Universal* involucre scarcely any. (*Archangelica* and *Angelica,* Hoffm.).—Name, *Angelic,* from its cordial and medicinal properties.

1. A. *Archangélica,* Linn. (*garden Angelica*)*;* terminal leaflet lobed, seed free marked with numerous vittæ. *Engl. Bot. t.* 2561. *Engl. Fl. v. ii. p.* 80.—*Archangelica officinalis, Hoffm.*

Watery places, rare; scarcely of British origin. Near Birmingham;—and upon the Thames' side; also in Durham. *Mr. Backhouse. Fl.* June—Sep. ♂.—*Stem* 4—5 feet high, and from 1—2 inches in the thickest diameter, glabrous, fistulose. *Leaves* bipinnate; *flowers* greenish white.—*Candied Angelica,* a well known article in confectionary, consists of the prepared stalks of this plant, and in that state they are agreeable, otherwise, though aromatic, the flavour is too powerful and pungent to be pleasant. It is called *Archangelica,* *αρχη,* implying its imagined superiority in virtue to the following species.

H, 2. A. *sylvéstris,* Linn. (*wild Angelica*)*;* leaflets equal ovate serrated at the base somewhat lobed, fruit with the interstices of the ridges having single vittæ. *Engl. Bot. t.* 1128. *Hook. Scot. i. p.* 90. *Engl. Fl. v. ii. p.* 81.

Moist woods and marshy places, especially near rivers, frequent. *Fl.* July. ♃.—*Plant* 2—3 feet high. *Stem* purplish, pubescent above, as well as the *umbels.*—Inferior in quality to the former species.

(VII. SESELI *TRIBE.* Gen. 55—62.)

55. Críthmum. *Linn.* Samphire.

Cal. obsolete. *Pet.* elliptical, entire, involute. *Fruit* subterete. *Carpels* (spongy) with 5 elevated sharp somewhat winged *ridges,* of which the lateral ones are a little broader and marginal. *Seed* subterete, free, abundantly marked with *vittæ.*—Universal *and* partial involucres *of many leaves.*—Name from κριθη, *barley;* from a fancied resemblance between the fruit of this plant and a grain of Barley.

1. C. *marítimum*, Linn. (*Sea Samphire*); leaflets lanceolate fleshy, leaves of the involucre ovate. *Engl. Bot. t.* 819. *Hook. Scot. i. p.* 89. *Engl. Fl. v. ii. p.* 74.

Rocks by the sea side: rare in Scotland, found only, I believe, on the coast of Galloway and thence northward to Colzean Castle, Ayrshire, whence I have numerous specimens sent by *Mr. James Wilson;* and at Aberlady, Haddingtonshire, *Mr. John Ferme. Fl.* Aug. ♃.—Whole plant very succulent, pale green. *Leaves* bi-triternate.—When the process of drying this plant for the Herbarium is aided by immersion in hot water, a number of white dots, as Mr. W. Wilson observes, make their appearance on the surface, which are quite opaque.—*Samphire* makes a warm aromatic pickle, and is sold for this purpose in England; being very superior to the *Salicornia herbacea*, which often passes under the name of *Samphire*, and is used in the same way.

56. Méum, *Tourn.* Spignel.

Cal. obsolete. *Pet.* entire, elliptical, the point incurved. *Fruit* subterete. *Carpels* with 5 prominent, acutely carinated, equal *ridges*, of which the lateral ones are at the margin. *Interstices* with many *vittæ. Seed* subsemiterete.—Universal involucre *of few leaves, or* 0: partial *of many leaves.*—Name; supposed to be the μηον of Dioscorides.

1. M. *athamánticum*, Jacq. (*Spignel, Meu,* or *Bald-money*); all the leaflets multipartite the segments bristle-shaped. *Engl. Bot. t.* 2249. *Engl. Fl. v. ii. p.* 86.—*Athamanta Meum, Linn.*—*Ligusticum Meum, Crantz.*—*Hook. Scot. i. p.* 89.

Dry alpine pastures, in the north of England and Scotland; especially in the Highlands, frequent. *Fl.* June, July. ♃.—*Root* fusiform, eaten by the Highlanders as an aromatic and carminative: at its summit are the fibrous remains of former years' leaves. *Leaves* long, dark-green, doubly pinnate. *Flowers* yellowish.—Remarkable for its setaceo-multifid leaf and powerfully aromatic smell. *Bald*, or *Bald-money* is a corruption of *Balder*, the *Apollo* of the northern nations; to whom this plant was dedicated.

57. Ligústicum. *Linn.* Lovage.

Cal. of 5 teeth, or obsolete. *Pet.* obcordate with an inflexed point. *Fruit* subterete, or slightly and laterally compressed. *Carpels* with 5 sharp, somewhat winged equal *ridges*, of which the lateral ones are marginal. *Interstices* with many *vittæ. Seed* subsemiterete.—Universal Involucre *various:* partial *of many leaves.*—Name from *Liguria*, where the old *Ligusticum Levisticum* abounds. Hence, too, our word *Lovage.*

H. 1. L. *scóticum*, Linn. (*Scottish Lovage*) *;* leaves twice ternate, leaflets subrhomboid dentato-serrate not glossy, general involucre of about 6 narrow leaves, calyx 5-toothed. *Engl. Bot. t.* 1207. *Hook. Scot. i. p.* 80. *Engl. Fl. v. ii. p.* 82.

Rocky sea-coasts, in the north of England and in Scotland, frequent. *Fl.* July. ♃.—*Root* fusiform, acrid but aromatic. *Stem* nearly simple. *Leaves* mostly radical: *leaflets* large, deeply serrated, rather fleshy.—In the island of Skye this plant is eaten raw and called *Shunis.*—The true *Lovage,* common in gardens, *Ligusticum Levisticum* (now, the genus *Levisticum*) has truly winged *ridges* to the fruit, and fewer *vittæ ;* but in other respects is nearly allied to this. It may, however, at once be known by its larger size, branched *stems,* and more compound shining *leaves.*

58. SILÁUS. *Besser.* Pepper-Saxifrage.

Cal. obsolete. *Pet.* obovate, submarginate with an inflexed point, appendaged, or sessile and truncated at the base. *Fruit* subterete. *Carpels* with 5 sharp, somewhat winged equal *ridges,* of which the lateral ones are at the margin. *Interstices* with many *vittæ. Seed* subsemiterete.—Universal involucre *of few leaves, or none :* partial *of many leaves.*—Scarcely different from *Ligusticum,* except in its yellowish, nearly entire, (not acutely emarginate) petals, truncated and sessile at the base.—Name of dubious origin. It was applied by Pliny to some herb.

H. 1. S. *praténsis,* Besser, (*meadow Pepper-Saxifrage*) *;* leaves tripinnate, leaflets linear-lanceolate opposite, general involucre of 1 or 2 leaves. *Peucedanum Silaus, Linn.—Engl. Bot. t.* 2142. *Hook. Scot. i. p.* 88.—*Cnidium Silaus, Spreng.—Engl. Fl. v. ii. p.* 91.

Pastures and meadows, not unfrequent in England. Near Oxenford Castle and Kelso, Scotland. *Fl.* July—Sept. ♃.—1—2 feet high. *Partial umbels* small, distant. *Flowers* pale yellow.—Whole plant fetid when bruised, apparently refused by cattle.

59. SÉSELI. *Linn.* Meadow-Saxifrage.

Cal. of 5 teeth. *Pet.* obcordate, with an inflexed point. *Fruit* oval or oblong, subterete, crowned with the reflexed styles. *Carpels* with 5 prominent, filiform or thick, elevated corky *ridges,* of which the lateral ones are marginal and often a little broader. *Interstices* with a single *vitta. Seed* subsemiterete.—Universal involucre *various,* partial *of many leaves.*—Name from σεσελι, originally applied to some plant of this kind.

H. 1. S. *Libanótis,* Koch, (*mountain Meadow-Saxifrage*)*;* stem furrowed, leaves bipinnatifid, leaflets incised the segments lanceolate very acute, umbels hemisphærical, universal involucre of many leaves. *Athamanta Libanotis, Linn.—Engl. Bot. t.* 138. *Engl. Fl. v. ii. p.* 88.

Chalky pastures, very rare. Gogmagog hills, Cambridgeshire (*Ray*); and I possess fine specimens from the same county, through the kindness of my friend *Prof. Henslow.* Between St. Albans and Stony Stratford, *Huds. Fl.* Aug. ♃.—*Root* fusiform, crowned with the fibrous bases of the old *leaves. Stem* 1½ to 2 feet high.—In some of the specimens from *Mr. Henslow,* one of the peduncles of the umbel is twice the length of the rest.

60. ŒTHÚSA. *Linn.* Fool's Parsley.

Cal. obsolete. *Pet.* obcordate, with an inflexed point. *Fruit* ovato-globose. *Carpels* with 5 elevated, thick, acutely carinated *ridges,* the lateral ones marginal and a little broader, bordered by a somewhat winged keel. *Interstices* with single *vittæ. Seed* semiglobose.—Universal involucre 0, partial *of* 3 *unilateral drooping leaves.*—Name from *αιθω, to burn,* on account of its acrid quality.

H. 1. Œ. *Cynápium,* Linn. (*common Fool's Parsley or lesser Hemlock*); leaves uniform, leaflets wedge-shaped decurrent with lanceolate segments. *Engl. Bot. t.* 1192. *Hook. Scot. i. p.* 92. *Engl. Fl. v. ii. p.* 64.

Fields and gardens. *Fl.* July, Aug. ⊙.—One foot high. *Stem* striated, branched, very leafy. *Leaves* glabrous, doubly, or the lower ones trebly, pinnate: segments ovato-lanceolate, variously cut. *Umbels* terminal, on long stalks. *Umbellules* small, distant. *Universal* involucre none, *partial involucres* of 3, long, pendent leaves all on one side, by which it is readily known from other *umbelliferous plants.*—The smell is nauseous, and it is esteemed very unwholesome.

61. FŒNÍCULUM. *Hoffm.* Fennel.

Cal. obsolete. *Pet.* roundish, involute, narrower apex obtuse. *Fruit* subterete. *Carpels* with 5 prominent obtuse keeled *ridges,* of which the lateral ones are marginal and a little broader. *Interstices* with single *vittæ. Seed* subsemiterete.—Universal *and* partial *involucre* 0.—Name from *fœnum, hay,* its smell being compared to that of Hay.

H. 1. F. *vulgáre,* Gærtn. (*common Fennel*); leaves biternate, leaflets linear filiform pinnatifid, segments awl-shaped. *Anethum Fœniculum, Linn.—Engl. Bot. t.* 1208.—*Meum Fœniculum, Spreng. Engl. Fl. v. ii. p.* 85.

Plentiful on chalky cliffs in England, near the sea, (*Sm.*) and in the neighbourhood of towns and villages in the counties of Norfolk and Suffolk, at short distances from the coast. *Fl.* July, Aug. ♃.—*Stem* 3—4 feet high, fistulose. *Leaves* much divided with very slender segments. *Flowers* dark yellow: at the base of the styles very glutinous. This is the true *Fennel* of the Gardens, and its *seeds* are esteemed as carminative. The *leaves,* when boiled, are served up with Mackarel on the eastern coasts of England.

62. ŒNÁNTHE. *Linn.* Water-Dropwort.

Cal. of 5 teeth. *Pet.* obcordate with an inflexed point. *Fruit* subterete, crowned with the strait styles. *Carpels* with 5, blunt, convex *ridges*, of which the lateral ones are marginal and a little broader. *Interstices* with single *vittæ*. *Seed* tereti-convex; *axis* none.—Universal involucre *various*, partial *of many leaves*. Flowers of the ray on long pedicels, sterile; those of the disk sessile or shortly pedicellate, fertile.—Name from οινη *a vine*, and ανθος, *a flower*, alluding to the vinous smell of the blossoms.

H. 1. Œ. *fistulósa*, Linn. (*common Water-Dropwort*); root stoloniferous, stem-leaves pinnated their main stalk as well as the stem cylindrical tubular, umbels of very few rays. *Engl. Bot. t.* 363. *Hook. Scot. i. p.* 91. *Engl. Fl. v. ii. p.* 68.

Ditches and rivulets, common. *Fl.* July, Aug. ♃.—*Plant* 2—3 feet high, remarkably tubular and fistulose. *Stem-leaves* distant and the *leaflets*, which are few and small, are confined to the upper extremity of the leaves. *Umbels* small. *Gen. involucre* often wanting.

H. 2. Œ. *pimpinelloídes*, Linn. (*Parsley Water-Dropwort*); leaflets of the radical leaves wedge-shaped cloven those of the stem linear entire very long, general involucre of several linear leaves. *Engl. Bot. t.* 347. *Hook. Scot. i. p.* 91. *Engl. Fl. v. ii. p.* 69.

Salt marshes, not unfrequent; less common in Scotland, and principally confined to the West coast. *Fl.* July, ♃.—2 feet or more high. *Umbellules* thickly crowded, forming almost sphærical heads when in fruit.

H. 3. Œ. *peucedanifólia*, Poll. (*Sulphurwort Water-Dropwort*); leaflets all linear, general involucre none, knots of the root sessile elliptical, (*Sm.*) *Engl. Bot. t.* 348. *Engl. Fl. v. ii. p.* 70.

Fresh-water ditches and bogs in Oxfordshire, Bedfordshire, and Suffolk. In Sussex, *Mr. Borrer*. *Fl.* June. ♃.—Allied to the last, and found only, as it appears, near fresh water. The *roots*, Sir J. E. Smith tells us, taste like *parsneps*, but are probably dangerous.

H. 4. Œ. *crocáta*, Linn. (*Hemlock Water-Dropwort*); leaves tri-quadripinnate, leaflets cuneato-ovate cut and serrated those of the upper leaves narrower, general involucre of few leaves (abounding in a yellow juice.) *Engl. Bot. t.* 2313. *Hook. Scot. i. p.* 92. *Engl. Fl. v. ii. p.* 71.

Watery places, by ditches and rivers, frequent. *Fl.* July. ♃.—*Root* consisting of large fusiform tubers. *Plant* 3—5 feet high: different from all the preceding in the great breadth of its *leaflets*, and large, much ramified *stems*, full of a poisonous yellow juice.—Very nearly allied to this is the following species, which I introduce with some hesitation.

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5. Œ. *apiifólia*, Brot. (*Celery-leaved Water-Dropwort*); radical and cauline leaves tripinnate upper ones pinnated, leaflets all wedge-shaped inciso-serrate striated, (no peculiar juices). *Brot. Fl. Lusit. v. i. p.* 420. *Spreng. Syst. Veget. v. i. p.* 889.

About Plymouth, *Mr. Banks*. *Fl.* July. ♃.—Specimens of an *Œnanthe* were sent to me some years ago by Mr. Banks and Mr. R. C, Sconce from the above station, with the remark that it differed essentially from the common *Œ. crocata*, in having *no yellow fetid juice*. On afterwards visiting Prof. Brotero at Lisbon, Mr. Sconce was struck with the figure and description of *Œ. apiifolia* of that author, which he had there the opportunity of consulting, and he kindly wrote to assure me that he believed this to be identical with the Plymouth plant. In Gouan's herbarium is a specimen of *Œ. apiifolia*, and I have reason to believe received from Brotero himself; but this, in its foliage, &c. almost exactly tallies with the figure in *Engl. Bot.* and with my Sussex specimens. In all, the leaves have much narrower leaflets than our Scottish *Œ. crocata*, and that which I have figured for the *crocata* in *Fl. Lond.* The Plymouth specimens I have given away, and have not now the means of consulting them. I feel persuaded however that 2 species have been hitherto confounded under our *Œ. crocata;* and they well merit more particular attention from Botanists.

H. 6. Œ. *Phellándrium*, Spreng. (*fine-leaved Water-Dropwort*); leaves decompound nearly uniform with narrow oblong short divaricated segments, peduncles lateral, general involucre scarcely any. *Engl. Fl. v. ii. p.* 71.—*Phellandrium aquaticum, Linn.*—*Engl. Bot. t.* 684. *Hook. Scot. i. p.* 92.

Ditches and pools. *Fl.* July. ♃.—*Stem* 2—3 feet high, very thick below, much branched, branches spreading. *Umbels* rather small; mostly perfect in every *flower*.

(VIII. AMMI *TRIBE.* Gen. 63—73.)

63. BUPLEÚRUM. *Linn.* Hare's Ear.

Cal. obsolete. *Pet.* roundish, entire, point closely involute, broad, retuse. *Fruit* laterally compressed, subdidymous, crowned with the depressed base of the styles. *Carpels* with 5 equal and winged, filiform and sharp, or slender and obsolete *ridges*, of which the lateral ones are marginal. *Interstices* with or without *vittæ*. *Seed* tereti-convex, plane in front.—Involucres *various. Leaves undivided.*—Name from βȣς, an *ox*, and πλευρον, a *rib*, from the ribbed leaves in some of the species.

1. B. *Odontítes*, Linn. (*narrow-leaved Hare's Ear*); general and partial involucre each about 4—5 leaved, leaflets lanceolate cuspidate longer than the umbels, leaves linear 3-nerved, stem panicled. *Engl. Bot. t.* 2468. *Engl. Fl. v. ii. p.* 93.—*Odontites luteola, Spreng.*

Rocks in the neighbourhood of Torquay; on the Flag Post Hill, Torquay, *Rev. J. S. Tozer. Fl.* July. ⊙.—A small plant, 3—6 inches or more, high, with rigid striated, pale yellow green, pungent *leaves. Flowers* in terminal, much involucrated *umbels.*

2. B. *rotundifólium*, Linn. (*common Hare's Ear, or Thorow-wax*); universal involucre wanting, leaves perfoliate roundish-oval, partial involucres mucronate. *Engl. Bot. t.* 99. *Engl. Fl. v. ii. p.* 93.

Corn-fields in England, in a chalky soil. Abundant about Swaffham, and in Cambridgeshire, *Rev. Prof. Henslow. Fl.* July. ⊙.

H. 3. B. *tenuíssimum*, Linn. (*slender Hare's Ear*); stem very much branched, leaves linear, umbels lateral very minute few-flowered longer than the setaceous involucres. *Engl. Bot. t.* 478. *Engl. Fl. v. ii. p.* 94.

Salt marshes on the south and east coasts of England. *Fl.* Aug. Sept. ⊙.—*Stems* very wiry, slender. *Leaves* remote, very sharp, mostly 3-nerved. *Umbels* inconspicuous, often sessile, axillary.

* 64. SÍUM. *Linn.* Water-Parsnep.

Cal. of 5 teeth, or obsolete. *Pet.* obcordate, with an inflexed point, or entire and ovate. *Fruit* laterally compressed, or contracted and subdidymous, crowned with the reflexed styles with their depressed bases. *Carpels* with 5 equal, filiform, rather obtuse *ridges*, of which the lateral ones are marginal. *Interstices* with one or many *vittæ*. *Seed* subterete.—Universal Involucre *various*, partial *of many leaves*. (*Sium and Helosciadium, Koch.*)—Name derived, according to Théis, from the Celtic word *siw*, water.

1. S. *latifólium*, Linn. (*broad-leaved Water-Parsnep*); stem erect, leaves pinnated, leaflets oblongo-lanceolate equally serrated, umbels terminal. *Engl. Bot. t.* 204. *Hook. Scot. i. p.* 90. *Engl. Fl. v. i. p.* 56.

River-sides, ditches and watery places; rather rare in Scotland. *Fl.* July, Aug. ♃.—*Stems* 3—4 feet high, furrowed. *Fruit* small. *Leaflets* distant, 5—9 on a leaf.

H. 2. S. *angustifólium*, Linn. (*narrow-leaved Water-Parsnep*); stem erect, leaflets unequally lobed and serrated, umbels pedunculate opposite to the leaves. *Engl. Bot. t.* 139. *Hook. Scot. i. p.* 90. *Engl. Fl. v. ii. p.* 56.

Ditches and rivulets, frequent; not common in Scotland. *Fl.* July, Aug. ♃.—Smaller than the last. *Stem* striated: *leaflets* of the upper *leaves* most unequal and laciniated; *radical* ones ovate, their lowermost leaflets distant. Helosciadium. Appendix 11.

H. 1. ~~3.~~ ~~S.~~ *nodiflórum*, Linn. (*procumbent ~~Water-Parsnep~~* Marsh wort); stem procumbent, leaves pinnate, leaflets ovate subequally serrated, umbels sessile opposite to the leaves. *Engl. Bot. t.* 639. *Hook. Scot. i. p.* 90. *Engl. Fl. v. ii. p.* 57. *Helosciadium, Koch.*

Sides of lakes and rivulets. *Fl.* July, Aug. ♃.—1½ to 2 feet high. *Leaflets* of the radical *leaves* sometimes with a lobe at the base, on the upper margin. *Petals* slightly incurved at the apex.

H. 2. ~~4.~~ ~~S.~~ *répens*, Linn. (*creeping ~~Water-Parsnep~~* Marsh-wort); stem creeping, leaflets broadly ovate inciso-dentate, umbels on peduncles opposite to the leaves. *Engl. Bot. t.* 1431. *Hook. Scot. i. p.* 90. *Engl. Fl. v. ii. p.* 58. *Helosciadium, Koch.*

Boggy meadows and watery places in Oxfordshire, Cambridgeshire, and Bedfordshire. Side of the Fergus, above the bridge of the Ennis, *Mr. J. T. Mackay*; and at Guillon, Scotland. *Fl.* July, Aug. ♃.—*Stems* 6—10 inches long. *Leaflets* 5—9. Marsh-wort.

3. ~~5.~~ ~~S.~~ *inundátum*, Wiggers, (*least ~~Water-Parsnep~~*); stems creeping, lower leaves capillaceo-multipartite upper ones pinnatifid, um-

* Bupleurum falcatum. Appen. 10.

bels generally of 2 rays. *Engl. Fl. v. ii. p.* 58.—*Sison inundatum, Engl. Bot. t.* 227. *Hook. Scot. i. p.* 21.—*Hydrocotyle inundata, Sm. Fl. Brit. p.* 290.—*Meum, Spreng.*—*Helosciadium, Koch.*

Lakes and pools that are dried up in summer. *Fl.* May, July. ♂ ?. ⊙ ?—*Stems* 4—6 inches long; most of them capillaceo-multifid, with the segments small and lanceolate. *Partial umbels* minute, scarcely longer than their involucres. *Gen. involucre* none. *Fruit* large in proportion to the size of the plant, striated.

Bunium ~~65. Conopódium.~~ *Koch.* Earth-nut.

Cal. obsolete. *Pet.* obcordate, with an inflexed point. *Fruit* laterally contracted, linear-oblong, crowned with the conical ~~immarginate~~ bases of the strait styles. *Carpels* with 5, equal, filiform obtuse *ridges*, with many *vittæ.* *Seed* tereti-convex, plane in front.—Universal Involucre 0, partial *of few leaves.*—Named from ~~κωνος~~, βουνος a hill ~~cone~~, ~~and πους, a *foot;* from the cone-shaped bases of the styles.~~ where the plant delights to grow.

H. 1. C. *flexuósum,* (*common Earth-Nut*).—*Bunium flexuosum, With.*—*Engl. Bot. t.* 988. *Engl. Fl. v. ii. p.* 54.—*Conopodium denudatum, Koch.*—*Bunium denudatum, De Cand.*—*B. Bulbocastanum, Huds.*—*Curt. Lond. t.* 24. *Hook. Scot. i. p.* 88.—*Myrrhis Bunium, Spreng.*

Woods and pastures, frequent. *Fl.* May, June. ♃.—*Root* a solitary tuber, much sought after by children and pigs. *Stem* solitary, erect, flexuose, with few *leaves* much divided into very slender, linear, or almost setaceous segments. *Fruit* oblong, moderately ribbed, a little narrower upwards, crowned with the strait styles, which have conical, very tumid bases. The true *Bunium Bulbocastanum* is a very different plant from this, and has never been found in Britain.

66. Pimpinélla. *Linn.* Burnet-Saxifrage.

Cal. obsolete. *Pet.* obcordate with an inflexed point. *Fruit* laterally contracted, ovate, crowned with the swollen base of the reflexed styles. *Carpels* with 5 filiform equal *ridges,* of which the lateral ones are marginal. *Interstices* with many *vittæ.* *Seed* gibbous, plane in front.—*Universal* and *partial involucres* 0.—Name altered, as Linnæus informs us, from *bipennula, twice pinnated.*

H. 1. P. *Saxífraga,* Linn. (*common Burnet-Saxifrage*); radical leaves pinnate their leaflets roundish sharply serrate or cut, those of the stem bipinnate linear. *Engl. Bot. t.* 407. *Hook. Scot. i. p.* 95. *Engl. Fl. v. ii. p.* 89.

Dry pastures, frequent. *Fl.* July, Aug. ♃.—*Stem-leaves* few; lower and radical ones upon long stalks. *Leaflets* of the latter, (in specimens gathered by Mr. Jas. Wilson, in Ayrshire,) often deeply and pinnatifidly cut, and sometimes even bipinnatifidly so.

H. 2. P. *mágna,* Linn. (*greater Burnet-Saxifrage*); leaves all pinnate, leaflets ovato-serrate subincised the terminal one (rarely the lateral ones) 3-lobed. *Engl. Bot. t.* 408. *Engl. Fl. v. ii. p.* 90.

Shady places, on a chalky or limestone soil, in several parts of England. Scotland, (*Herb. Bruce, in Sm.*). Near Cork, Ireland, *Mr. J. T. Mackay.*—*Fl.* July, Aug. ♃.—Larger in all its parts than the foregoing, and the leaflets of the upper *leaves* much broader and less divided.

67. CÁRUM. *Linn.* Caraway.

Cal. obsolete. *Pet.* obcordate. *Fruit* laterally compressed, oblong. *Carpels* with 5, filiform, equal *ridges*, their inner faces plane. *Interstices* with single *vittæ*. *Seed* tereti-convex, plane in front.—Universal *and* partial involucres *various.*—Name derived, according to Pliny, from that of the country *Caria.*

1. C. *Cárui*, Linn. (*common Caraway*); stem branched, partial involucre none, general scarcely any. *Engl. Bot. t.* 1503. *Hook. Scot. i. p.* 95. *Engl. Fl. v. ii. p.* 86.

Meadows and pastures, in several places both in England and Scotland. *Fl.* June, ♂.—*Stem* 1—2 feet high. *Leaves* doubly pinnated, cut into linear segments, of which the lowermost are decussate. *Umbels* dense. *Carpels* agreeably aromatic, and well known in the Kitchen and Pharmacopeia under the name of *Caraway seeds.*

2. C. *verticillátum*, Koch, (*whorled Caraway*); leaflets all capillary in short whorled segments.—*Sium verticillatum, Engl. Fl. v. ii. p.* 59.—*Sison verticillatum, Linn.*—*Engl. Bot. t.* 395. *Hook. Scot. i. p.* 90.

Unknown to England. In the flat parts of Wales (*Huds.*) Killarney, and near Bantry Bay, Ireland, *Mr. J. T. Mackay.* Extremely abundant in moist hilly pastures on the West of Scotland, especially near the sea. *Fl.* July, Aug. ♃.—*Leaves* mostly radical; a long common *petiole* bears a number of opposite multifid capillary *leaves*, whose spreading makes them appear whorled. *Stem* a foot high, slender. *Umbels* few, terminal. *Involucre* very small.

68. ÆGOPÓDIUM. *Linn.* Gout-weed.

Cal. obsolete. *Pet.* obcordate, with an inflexed point. *Fruit* compressed laterally, oblong. *Carpels* with 5 filiform *ridges*, of which the lateral ones are marginal. *Interstices* without *vittæ*. *Seed* tereti-convex, plane in front.—Universal *and* partial involucres 0.—Differs from *Carum* only in the absence of vittæ.—Name from αιξ, αιγος, a *goat*, and πȣς, *foot:* the leaves being cleft something like a goat's foot.

H. 1. Æ. *Podagrária*, Linn. (*Gout-weed, or Herb-Gerarde*). *Engl. Bot. t.* 940. *Hook. Scot. i. p.* 95. *Engl. Fl. v. ii. p.* 77.

Gardens and wet places. *Fl.* May, June. ♃.—A foot and a half high. *Radical leaves* twice ternate, upper ones ternate; *leaflets* ovate, acuminate, unequally serrated. The creeping *root* is pungent and aromatic.

69. SÍSON. *Linn.* Bastard Stone Parsley.

Cal. obsolete. *Pet.* broadly obcordate, deeply notched and curved with an inflexed point. *Fruit* laterally compressed, ovate. *Carpels* with 5 filiform, equal *ridges*, of which the lateral ones are marginal. *Interstices* with single, short, club-shaped *vittæ*. *Seed* gibbous, convex, plane in front.—Universal *and* partial involucres *of few leaves*, partial *subdimidiate.*—Name, according to Théis, originating in the Celtic *sizun*, a *running brook;* some of the plants formerly placed in this genus delighting in such situations.

H. 1. S. *Amómum*, Linn. (*Hedge Bastard Stone Parsley*). *Engl. Bot. t.* 954. *Engl. Fl. v. ii. p.* 60.

Chalky, rather moist ground, under hedges, in England. *Fl.* Aug. ⊙. or ♂.—2—3 feet high. Lower *leaves* pinnated with lobed, inciso-serrate, ovate *leaflets*, upper ones cut into narrow segments. *Petals* broad. *Fruit* roundish ovate.—Smith says that the seeds are pungent and aromatic; and that they and the whole plant, when bruised, emit a strong smell, resembling that of *Bugs*.

70. TRÍNIA. *Hoffm.* Honewort.

Cal. obsolete. *Pet.* of the *barren plant* lanceolate, subemarginate, with a contracted involute point, of the *fertile* ovate, with a short inflexed point. *Fruit* laterally compressed, ovate. *Carpels* with 5 prominent, filiform, equal *ridges*, of which the lateral ones are marginal. *Interstices* without *vittæ* or nearly so: but with a distinct canal under each ridge. *Seed* gibbous, convex.—Involucres *various*. The two kinds of petals, the diœcious plants, and the vittæ or evident canals beneath the ridges, together with a peculiar habit, constitute this a very distinct genus. Named in honour of *Dr. C. B. Trinius*, a learned Botanist of St. Petersb[illegible]gh, Author of a *Species Graminum*, &c.

1. T. *glabérrima*, Hoffm. (*glabrous Honewort*); glabrous, leaves tripinnate, leaflets linear uniform, involucre none.—*Pimpinella dioica*, *Engl. Bot. t.* 1209. *Engl. Fl. v. ii. p.* 90.—*Seseli pumilum*, *Linn.* (*Sm.*).

Limestone, rare. Near Bristol, on St. Vincent's Rocks; at Uphill, Somersetshire, and near Athboy, county of Meath, Ireland, *Dr. Wade*. *Fl.* May, June. ♃.—Whole herb glaucous green, pale, remarkable for the narrow segments of its *leaves*, and its diœcious *flowers*. *Root* fusiform.

71. PETROSELÍNUM. *Hoffm.* Parsley.

Cal. obsolete. *Pet.* roundish, incurved, entire, scarcely emarginate, contracted into an inflexed segment. *Fruit* ovate, lateral, contracted, subdidymous. *Carpels* with 5 filiform equal *ridges*, of which the lateral ones are marginal. *Interstices* with single *vittæ*. *Seed* gibbous, convex, plane in front.—Universal involucre *of few*, partial *of many leaves.*—Differs from *Apium* in the petals being contracted into an oblong segment and in having the fruit ovate, and subdidymous.—Name πετρα, a *stone:* because it is a native of rocky or stony places. ✱

H. 1. P. *ségetum*, Koch, (*Corn Parsley*); radical leaves pinnated, leaflets ovate lobed cut and serrated, upper leaves with linear very

H. ✱ P. sativum. App. 12.

imperfect leaflets, rays of the umbels few and unequal.—*Sison segetum, Linn.*—*Engl. Bot. t.* 228. *Hook. Scot. i. p.* 91. *Engl. Fl. v. ii. p.* 60.

Moist fields, chiefly on a calcareous soil, in several parts of the middle and south of England. Said to have been found in one of the Hebrides, by the late *Dr. Walker*. *Fl.* Aug. ⊙. or ♂.—1 foot to 1½ high, wiry, spreading, branched. *Leaves* few, mostly radical. *General involucre* of about 2 leaves. *Fruit* ovate, strongly ribbed.—~~The *Garden Parsley*, *P. sativum*, is not wild in Britain.~~

72. Apium. *Linn.* Celery.

Cal. obsolete. *Pet.* roundish, entire, with a small, closely involute point. *Fruit* roundish, laterally contracted, didymous. *Carpels* with 3, filiform, equal *ridges*, of which the lateral ones are marginal. *Interstices* with single *vittæ*, outer ones frequently with 2—3 vittæ. *Seed* gibbous, convex, plane in front.—Universal *and* partial involucres 0.—Name, *apon*, *water*, in Celtic; from the places where the plant grows.

H. 1. A. *gravéolens*, Linn. (*Smallage or wild Celery*). *Engl. Bot. t.* 1210. *Hook. Scot. i. p.* 95. *Engl. Fl. v. ii. p.* 76.

Marshy places, especially near the sea; not unfrequent in England. Musselburgh in Scotland: and near Colzean Castle, Ayrshire, *Mr. James Wilson*.—*Fl.* Aug. ♂.—*Stem* furrowed, 2 feet high. *Leaves* ternate; leaflets large, wedge-shaped, lobed and cut at the extremity: the lower leaves are upon long stalks with their leaflets rounder and truncate at the base. *Umbels* often sessile; petioled ones of few flowers.—This is the origin of our *garden Celery:* and both the seeds and roots are well known culinary articles.

73. Cicúta, *Linn.* Cowbane.

Cal. of 5 teeth, leafy. *Pet.* obcordate with an inflexed point. *Fruit* roundish, contracted at the side, didymous. *Carpels* with 5 nearly plane, equal *ridges*, of which the lateral ones are marginal. *Interstices* with single *vittæ*, which in the dry fruit are more raised than the ridges. *Seed* terete.—Universal involucre *of few leaves, or* 0; partial *of many leaves*.—Name. *Cicuta* was a term given by the Latins to those spaces between the joints of a reed of which their pipes were made: and the stem of this plant is similarly marked by hollow articulations.

1. C. *virósa*, Linn. (*water Hemlock or Cowbane*). *Engl. Bot. t.* 479. *Hook. Scot. i. p.* 92. *Engl. Fl. v. ii. p.* 62.

In ditches, and about the margins of rivers and lakes in England and the lowlands of Scotland, but not very frequent. *Fl.* July, Aug. ♃.—*Stem* 3—4 feet high, branched. *Root* and lower part of the stem, which is very large, hollow, and divided by transverse partitions into large cells. *Leaves* biternate, the radical ones pinnated: *leaflets* lanceolate, serrated. *Umbels* pedunculate.—A deadly poison.

(IX. SCANDIX *TRIBE.* Gen. 74—77.)

74. CHÆROPHÝLLUM, *Linn.* Chervil.

Cal. obsolete. *Pet.* obcordate, with an inflexed point. *Fruit* laterally compressed or contracted. *Carpels* with 5 obtuse, equal *ridges*, of which the lateral ones are marginal, with a deep furrow on the inner face of the carpels. *Interstices* with single *vittæ*. *Seed* tereti-convex, furrowed in front.—Universal involucre 0, *or of few leaves*, partial *of many leaves*.—Differs from all the *Ammi Tribe* in the deep furrow in front of each carpel.—Name from χαιρω, to *rejoice*, and φυλλον, a *leaf:* hence our word *Chervil*, applied to the cultivated *Anthriscus Cerefolium*, whose leaves have an agreeable smell.

1. C. *temuléntum*, Linn. (*Rough Chervil*); fruit with obtuse ribs, stem rough (spotted) swelling below each joint, partial involucres reflexed. *Engl. Bot. t.* 1521. *Hook. Scot. i. p.* 93.—*Myrrhis temulenta*, *Engl. Fl. v. ii. p.* 51.—*M. temula*, *Spreng.*

Hedges and copses, common. *Fl.* June, July. ♃.—3 feet or more high: rough with hairs. *Leaves* doubly pinnate, *leaflets* pinnatifid or inciso-lobate. *Fruit* linear-oblong, striated. *Umbels* at first drooping.

2. C. *aúreum*, Linn. (*tawny-seeded Chervil*); pubescent, fruit with obtuse ribs coloured, stems slightly swelling below the joints, leaflets very acuminate inciso-pinnatifid. *Engl. Bot. t.* 2103. *Hook. Scot. i. p.* 94.—*Myrrhis aurea*, *Spreng.*—*Engl. Fl. v. ii. p.* 52.

Fields between Arbroath and Montrose. Near Corstorphine, Edinburgh, *Mr. G. Don.* *Fl.* June. ♃.—3 feet or more high, branched, aromatic. *Leaves* tripinnate: *leaflets* peculiarly attenuated, at least on the upper leaves (for the radical ones are more obtuse) which character distinguishes this from every other British species.

3. C. *aromáticum*, Linn. (*broad-leaved Chervil*); fruit with obtuse ribs, leaves subternate bipinnate, leaflets ovato-oblong subacuminate serrate undivided. *Don's Descr. of rare Scot. Pl. p.* 7. *Hook. Fl. Scot. i. p.* 94.—*Myrrhis aromatica*, *Spreng.*—*Engl. Fl. v. ii. p.* 52.

Road side near Guthrie, leading from Forfar to Arbroath. *Mr. G. Don.* *Fl.* June. ♃.—2—3 feet high, slightly pubescent below, glabrous above. *Leaves* biternate, leaflets large, undivided or rarely with a small lobe near the base, pubescent beneath. In this, as well as in *C. aureum*, there is sometimes a small general *involucre*. *Leaves*, as Persoon observes, resembling those of *Ægopodium Podagraria*. Their smell is aromatic. (*Mr. G. Don.*)

75. ANTHRÍSCUS, *Pers.* Beaked-Parsley.

* *Carpels smooth.*

Cal. obsolete. *Pet.* obcordate with an inflexed, generally short, point. *Fruit* contracted on the side, rostrate. *Carpels* subterete, without *ridges*, the beak alone with 5 ridges. *Seed* tereti-convex, deeply furrowed in front.—Universal involucre *none*, partial *of many leaves*.—Name given by Pliny to a plant allied probably to this genus, but whose derivation we are ignorant of.

H. 1. A. *sylvéstris*, Koch, (*wild beaked-Parsley*); umbels terminal stalked, stem a little swelling below each joint glabrous.—*Chærophyllum sylvestre, Linn.*—*Engl. Bot. t.* 752. *Hook. Scot. i. p.* 93. *Engl. Fl. v. ii. p.* 48.

Under the hedges and borders of fields, frequent. *Fl.* April, June. ♃.—3 feet or more high, branched. *Leaves* triply pinnate, *leaflets* ovato-lanceolate, deeply cut. *Umbels* at first slightly drooping. *Partial involucres* of several ovato-lanceolate leaves. *Fruit* linear-oblong, with a much less evident beak than in *A. Cerefolium*. This beak, alone, is marked with a few ribs.

2. A. *Cerefólium*, Koch, (*Garden beaked-Parsley*); umbels lateral sessile, leaves tripartite decompound, leaflets ovate pinnatifid segments obtuse.—*Scandix Cerefolium, Linn.*—*Engl. Bot. t.* 1268.—*Chærophyllum sativum, Hook. Scot. i. p.* 93. *Engl. Fl. v. ii. p.* 48.

Hedges and about gardens, whence it has perhaps generally escaped. *Fl.* July. ⊙.—*Stem* slender. 1½—2 feet high. *Leaves* pale yellow-green, delicate. *Umbels* sessile, lateral, of few rays, pubescent. *Partial involucres* of few leaves, about 3, unilateral, linear. *Umbellules* small. *Fruit* large, perfectly glabrous, linear, tapering upwards. Known as a salad and pot-herb under the name of *Garden Chervil*.

** *Carpels muricated.*

3. A. *vulgáris*, Pers. (*common beaked-Parsley*); stem smooth, leaves ternately decompound the segments obtuse, umbels opposite the leaves, fruit ovately conical hispid about twice as long as the glabrous beak. *Hook. Scot. i. p.* 93. *Engl. Fl. v. ii. p.* 45.—*Scandix Anthriscus, Engl. Bot. t.* 818.

Waste places, by road-sides, especially near towns and villages. *Fl.* May, June. ⊙.—2 feet or more high, swelling under each joint. *Leaves* slightly hairy. *Partial Umbels* small, with small involucres. *Fruit* rather large, with a distinct furrow on each side which extends to the beak, covered with hooked bristles.

76. SCÁNDIX. *Linn.* Shepherd's-Needle.

Cal. obsolete. *Pet.* obovate, with an inflexed point. *Fruit* laterally compressed, with a very long beak. *Carpels* with 5 obtuse equal *ridges*, the lateral ones marginal. *Interstices* without ridges, or obsolete *vittæ*. *Seed* tereti-convex, with a deep furrow in front.—Universal Involucre 0, or *of few leaves*, partial *of* 5—7 *leaves*.—Name from σκεω, to *prick*, because of the sharp and long points to the seeds.

H. 1. S. *Pécten*, Linn. (*Needle Chervil, Venus' Comb, or Shepherd's Needle*); fruit roughish, leaflets cut into many linear short segments. *Engl. Bot. t.* 1396. *Hook. Scot. i. p.* 92. *Engl. Fl. v. ii. p.* 48.

Corn-fields, abundant. *Fl.* June, July. ⊙.—*Stem* 4—6 inches to a foot high, roughish. *Leaves* triply pinnate. *Umbels* of very few rays, 2—3. *Partial Involucres* pinnatifid, or bipinnatifid. *Fruit* of singular appearance, and very large in proportion to the size of the plant and of the flowers that produce it.

77. MÝRRHIS. *Tourn.* Cicely.

Cal. obsolete. *Pet.* obcordate with an inflexed point. *Fruit* laterally compressed. *Seed* with its sides involute, covered by a pericarp, formed of 2 membranes, the exterior having 5 equal, acutely carinated *ridges*, hollow within, closely adnate to the interior. *Vittæ* none.—Universal Involucre 0, partial *of many leaves.* —Name derived perhaps from *Myrrha, myrrh*, the foliage of one species at least possessing an agreeable scent.

1. M. *odoráta*, Scop. (*sweet Cicely*); fruit large with very short ribs and deep furrows between them. *Engl. Fl. v. ii. p.* 50.—*Scandix odorata, Linn.*—*Engl. Bot. t.* 697. *Hook. Scot. i. p.* 93.

Pastures in mountainous countries, especially in the north of England and Lowlands of Scotland, generally near houses. *Fl.* May, June. ♃. —Whole plant highly aromatic, 2 feet and more high. *Leaves* large, triply pinnate, *leaflets* pinnatifid, ovato-lanceolate, inciso-serrate.—Mr. James Wilson of Fenwickland, Ayrshire, has called my attention to an appearance of white spots on the foliage of this plant, which, he justly says, seem neither to be caused by insects nor by disease: for the plants appear, even in the portion of the leaf so marked, in a perfectly healthy state: when seen under a microscope, the cellular texture is perfect, but the epidermis is there more easily separated from the parenchymatous substance, and is quite colourless. It is something of the same nature probably as Smith calls mildew on the *Chæroph. temulentum*, vid. *Engl. Fl. v. ii. p.* 52. Many of the *partial umbels* of this species, especially the inner ones, and sometimes even entire *umbels*, prove abortive. The *fruits* are remarkable for their large size and powerful fragrance, and, as Sir J. E. Smith well observes, make a part of the humble luxuries and simple medicines of the mountain cottager.

(X. SMYRNIUM *TRIBE.* Gen. 78—81.)

78. SMÝRNIUM. *Linn.* Alexanders.

Cal. obsolete. *Pet.* lanceolate or elliptical, entire with an inflexed point. *Fruit* laterally contracted. *Carpels* reniformi-globose, didymous, each with 3 dorsal prominent sharp *ridges*, the 2 lateral and marginal ones nearly obsolete. *Interstices* with many *vittæ*. *Seed* involute.—Involucre *various.*—Name from *σμυρνα*, synonymous with *μυρρα*, *Myrrh*, from the scent of the juice.

1. S. *Olusátrum*, Linn. (*common Alexanders*); cauline leaves ternate petiolate serrate. *Engl. Bot. t.* 230. *Hook. Scot. i. p.* 94. *Engl. Fl. v. ii. p.* 76.

Waste ground and among ruins, especially near the sea, not unfrequent. *Fl.* May, June. ♂.—*Stem* 3—4 feet high, very stout, furrowed.

Leaves bright yellow green, twice or (the lower ones) thrice ternate, with a very broad membranous base: *leaflets* very large, broadly ovate, lobed and serrated. *Flowers* yellow green, in very dense, numerous, rounded *umbels*. *Involucres* none. *Fruit* almost black when ripe.—Aromatic, but too strong and pungent to be agreeable. It was formerly used as a potherb, and takes its specific name from *Olus*, a *potherb*, and *ater*, *black*; in allusion, apparently, to the black colour of the fruit.

79. Physospérmum. *Cuss.* Bladder-seed.

Cal. of 5 teeth. *Pet.* obcordate with an inflexed point. *Fruit* laterally contracted. *Carpels* reniformi-globose, didymous, each with 5 filiform, very slender, equal filiform *ridges*, of which the lateral ones are placed within the margin. *Interstices* with single *vittæ*. *Seed* involutely semi-lunar.—Universal *and* partial involucre *of many leaves.*—Name from φυσα, a *bladder*, and σπερμα, a *seed.*

1. P. *cornubiénse*, (*Cornish Bladder-seed*).—*P. aquilegifolium, Koch.—P. commutatum, Spreng. Umbell. Spec. p.* 22. *t.* 4. *f.* 8. *and f.* 7, (*Smyrnium nudicaule, Bieb.*) *Danaa aquilegifolia, All. Ped. n.* 1392. *t.* 63.—*Ligusticum aquilegifolium, Willd. Sp. Pl. v. i. p.* 1425.—*Ligusticum cornubiense, Linn. Sp. Pl. p.* 35. *t.* 4. *Amœn. Acad. v. iv. p.* 310. *Engl. Bot. t.* 683. *Engl. Fl. v. ii. p.* 82.—*Sison sylvaticum, Brot. Fl. Lus. p.* 423. *and Smyrnium nudicaule, Bieb. Fl. Taur. Cauc. v. i. p.* 328, (*according to Spreng.*)—*Smyrnium tenuifolium nostras. Dill. in Raii Syn. p.* 209. *t.* 8. (*fig. bad.*)

Bushy fields in Cornwall; about Bodmin; and only there, *Rev. J. S. Tozer. Fl.* July. ♃.—*Stem* a foot and a half to 2 feet high, erect, striated, glabrous, panicled above.—*Leaves* mostly radical, on long stalks, triternate, *leaflets* wedge-shaped, cut and laciniated or deeply tripartite, the segments acute, glabrous or minutely downy on the veins and margins. *Cauline leaves* few, small, less divided, the segments longer and slenderer. *Umbels* on long terminal stalks, of 10—12 spreading, lax rays. *Universal* and *partial involucres* of from 1—4 or 5 lanceolate, somewhat membranaceous leaves. *Partial umbels* spreading, rather lax, of many *flowers*; of which several in the centre bear only stamens and are consequently abortive. *Cal.* evident. *Petals* rather long, almost unguiculate, white. *Germen* ovato-globose, laterally compressed, furrowed, *ovules* very loose within. *Fruit* almost globose, laterally compressed, and contracted between the *carpels*, so that the fruit is didymous. *Carpels* reniformi-globose with 5 *ridges* and 4 broad, brown *vittæ*; the coat crustaceous and so loose that the *seed* is quite free within: a transverse section of this seed is crescent-shaped.—I am indebted for ripe fruit, both cultivated and wild, to the Rev. Mr. Bree and Dr. Graham. This extremely rare plant grows in only one spot in all Britain, namely in Cornwall, and that spot has other plants, common to it with the S. of Europe, as well as the present. I gave it formerly as my opinion, in *Flora Scotica*, under *Ligusticum scoticum*, that the *L. cornubiense, Sm.* was the same with *Danaa aquilegifolia* of Allioni; and this I judged, not only from a comparison of the plant with the figure and description of that writer, but with a specimen from Sarzana, in Sardinia. Sir

J. E. Smith, however, in *Engl. Fl.* has said "that it has been confidently asserted to be the identical *Danaa* of Allioni, but that it has been improperly confounded with it." This is the more remarkable, because I find, what I was not before aware of, that in Rees' Cyclopædia, Sir J. E. Smith has himself declared specimens sent him by Prof. Allioni to have proved his *Danaa* the same as our Cornish species; and further, that Prof. Sibthorpe has found the same plant on Mount Athos; a circumstance which his herbarium confirms. These clashing remarks have induced me again to compare, most carefully, my Sardinian with Cornish specimens, and I am more than ever convinced of their identity. Smith was probably misled by an idea that our plant had not separated flowers; but the reverse is the case.—In all my specimens gathered near Bodmin, by the Rev. Mr. Tozer, the *partial umbels* have the central flowers completely barren. Again, Smith did not observe the loose coat to the *seeds*, which certainly exists, and very distinctly in our British species.

80. CONÍUM. *Linn.* Hemlock.

Cal. obsolete. *Pet.* obcordate, with an inflexed point. *Fruit* laterally compressed, ovate. *Carpels* with 5 prominent, waved or crenated, equal *ridges*, of which the lateral ones are marginal. *Interstices* with many striæ, without *vittæ*. *Seed* with a deep narrow groove in front.—Universal Involucre *of few leaves*, partial *of* 3 *leaves on one side.*—Name κωνειον of Theophrastus, from κωνος, a *cone*, or a *top*, whose whirling motion resembles the giddiness produced on the human constitution by the poisonous juice of this plant.

H. 1. C. *maculátum*, Linn. (*common Hemlock*); stem glabrous spotted, leaves tripinnate, leaflets lanceolate pinnatifid with acute and often cut segments. *Engl. Bot. t.* 1191. *Hook. Scot. i. p.* 88. *Engl. Fl. v. ii. p.* 65.

Waste places, banks, and under walls, not unfrequent. *Fl.* June, July. ♂.—*Root* fusiform. *Stem* 2—4 feet high, striated and spotted with purple, much branched upwards. *Leaves* large, much divided, when bruised extremely fetid, yielding an extract which has been much employed both in the cure of scrophulous and cancerous maladies, and for the purpose of lowering the pulse. So powerful a plant should be carefully discriminated from its allies, and it is best distinguished by its spotted stem, fetid smell, and by the unilateral partial involucres, together with the waved ridges of the fruit.

81. ECHINÓPHORA. Linn. Prickly Samphire.

Cal. of 5 teeth. *Pet.* obcordate with an inflexed point, the extremity often long, bifid. *Flowers of the ray* sterile, on long stalks, *fertile* central and solitary. *Fruit* ovate, subterete, lodged in the receptacle, with a protruded beak. *Carpels* with 5 depressed waved and striated, and equal *ridges*. *Interstices* with single *vittæ*, *vittæ* covered with a cobweb-like membrane.—Universal *and* partial involucre *many-leaved.* Name derived from εχινος, a *hedgehog*, and φερω *to bear:* in reference to the prickly nature of the plant.

1. E. *spinósa*, Linn. (*Sea-side Prickly Samphire or Sea-Parsnep*); leaves bipinnatifid the segments trifid subulate spinous, involucres entire spinous. *Engl. Bot. t.* 2413. *Engl. Fl. v. ii. p.* 38.

Sandy sea-shores. Found, many years ago, in Lancashire and Kent; but now apparently extinct. *Fl.* July. ♃.—A very prickly and singular plant, but now I fear quite lost as a native of Britain.

C. *Umbels Imperfect.* (Tribes XI—XII.)

(XI. SANICULA *TRIBE.*)

82. SANÍCULA. *Linn.* Sanicle.

Cal. of 5 teeth, leafy. *Pet.* erect, obovate, with long inflected connivent points. *Fruit* terete, subglobose. *Carpels* densely clothed with hooked prickles, without *ridges*, with many *vittæ*. *Seed* semi-globose.—*Universal involucre* lobed; *partial* of many leaves.—*Name* derived from *sano*, to *heal*, because this plant was supposed "to make whole and sound all inward wounds and outward hurts."

H. 1. S. *europǽa*, Linn. (*Wood Sanicle*); lower leaves palmate, with the lobes trifid inciso-serrate, flowers all sessile. *Engl. Bot. t.* 98. *Hook. Scot. i. p.* 87. *Engl. Fl. v. ii. p.* 36.

Woods and thickets, frequent. *Fl.* May, June. ♃.—*Leaves* mostly radical, finely serrated, almost ciliated. *Heads of flowers* small, white.

83. ERÝNGIUM. *Linn.* Eryngo.

Cal. of 5 teeth, leafy. *Pet.* erect, oblong, with long inflected points. *Fruit* subterete, obovate. *Carpels* covered with chaffy scales, without *ridges* or *vittæ*. *Seed* semiterete.—Involucre *of many leaves*. Flowers *upon a scaly receptacle, collected into a compact head.*—Name ερυγγιον of Dioscorides.

H. 1. E. *marítimum*, Linn. (*Sea-Eryngo, Sea-Holly*); radical leaves roundish plaited spinous stalked upper ones lobed palmated amplexicaul rigid, involucres longer than the heads, scales of the receptacle 3-cleft. *Engl. Bot. t.* 718. *Hook. Scot. i. p.* 87. *Engl. Fl. v. ii. p.* 35.

Sandy sea-shores, frequent. *Fl.* July, Aug. ♃.—Whole plant very stiff and rigid, glaucous. *Leaves* and *involucres* beautifully veiny. *Flowers* blue, in dense heads, having at first sight more the appearance of a *compound flower* (of the class *Syngenesia*) than of an *umbelliferous Plant.* The *roots* are well tasted, when candied, and they are considered stimulating and restorative, having been so employed in the days of Shakspeare. Linnæus recommends the bleached shoots as a substitute for Asparagus.

2. E. *campéstre*, Linn. (*Field Eryngo*); radical leaves subternate lobes pinnatifid, cauline ones bipinnatifid amplexicaul all with spinous teeth, involucres lanceolate spinous, scales of the receptacle undivided. *Engl. Bot. t.* 57. *Engl. Fl. v. ii. p.* 35.

Very rare; and found, originally in Ray's time, truly wild in England;

and I believe only near Plymouth, whence *Mr. Banks* of that place has sent me beautiful specimens. Sandy fields, near Lismore, Waterford, Ireland, *Mr. Drummond*, (in Mackay's *Cat.*) The Northumberland stations have originated probably in ballast. *Fl.* July, Aug. ♃.

(XII. HYDROCOTYLE *TRIBE.*)

84. Hydrocótyle. *Linn.* White-rot.

Cal. obsolete. *Pet.* ovate, entire, acute, plane at the extremity. *Fruit* laterally compressed and flat, biscutate. *Carpels* with 5 filiform *ridges*, of which the central dorsal one and the lateral ones are often obsolete, and the two intermediate ones arched, without *vittæ*. *Seed* compressed and keeled.—Name from *υδωϱ*, *water*, and *ϰοτυλη*, a *cup* or *vase*. The leaves are a little depressed, and stalked in the centre, and may thence somewhat resemble a cup or platter. The plant grows in watery places.

1. H. *vulgáris*, Linn. (*common White-rot, Marsh Penny-wort*); leaves peltate orbicular somewhat lobed and crenate, heads of about 5 flowers. *Engl. Bot. t.* 751. *Hook. Scot. i. p.* 87. *Engl. Fl. v. ii. p.* 96.

Bogs, marshes, and banks of lakes, frequent. *Fl.* May, June ♃.—*Stems* creeping, producing from their joints clusters of petiolated *leaves* and simple *flower-stalks*, which are much shorter than the petioles. *Flowers* often with a reddish tinge.

*** *Perianth double, inferior. Petals* 5.

(*See* Staphylea *in* ORD. III.)

**** *Perianth single or wanting.* Gen. 85—89.

85. Chenopódium. *Linn.* Goose-foot.

Perianth single, inferior, 5-cleft, persistent and unaltered, closing upon, but not wholly enveloping, the *fruit*. *Seed* solitary, orbicular. —*Nat. Ord.* Chenopodeæ. *De Cand.*—Name from χην, χηνος, *a Goose*, and πȣσ, a *foot*, from the shape of the leaves in some of the species. They are more or less employed as potherbs.

* *Leaves semicylindrical. Flowers each with two bracteas.*

1. C. *fruticósum*, Schrad. (*shrubby Sea-side Goose-foot*); leaves semicylindrical, styles often 3 combined at the base, stem shrubby.—*Salsola fruticosa*, *Linn.*—*Engl. Bot. t.* 635. *Engl. Fl. v. ii. p.* 18.

On the Norfolk coasts, especially at Cley; and those of Suffolk, Dorsetshire, Devonshire and Cornwall: but rare. *Fl.* July, Aug. ♃.—Three feet and more high, with many erect, leafy branches. *Flowers* in small axillary clusters, sometimes solitary. *Calyx* unchanged in fruit, as the following species.

2. C. *marítimum*, Linn. (*annual Sea-side Goose-foot*); leaves semicylindrical a little tapering upwards, styles 2, stem herbaceous. *Engl. Bot. t.* 633. *Hook. Scot. i. p.* 83. *Engl. Fl. v. ii. p.* 16.

Sea-shore, frequent. *Fl.* July, Aug. ⊙.—This has quite the habit of the last species: but is greatly smaller and an annual. *Flowers* solitary or two in the axils of the *leaves*, and each subtended by two small, ovate, acute, narrow *bracteas.*

** *Leaves plane, undivided; bracteas under each flower none.*

H. 3. C. *ólidum*, Curt. (*stinking Goose-foot*); leaves ovato-rhomboid entire, flowers in dense clustered spikes, stem diffuse. *Engl. Bot. t.* 1034. *Hook. Scot. i. p.* 83. *Engl. Fl. v. ii. p.* 14.—*Ch. Vulvaria, Linn.*

Waste places and under walls, especially near the sea. *Fl.* Aug. ⊙. —*Leaves* small, petiolate, greasy to the touch and covered with a pulverulent substance, which, when bruised, yields a detestable odour, resembling that of putrid fish.

H. 4. C. *polyspérmum*, Linn. (*many-seeded Goose-foot*); leaves ovate entire, spikes elongated subcymose. *Hook. Scot. i. p.* 83.

α. stems all prostrate, leaves obtuse, spikes cymose leafless. *C. polyspermum, Engl. Bot. t.* 1480. *Engl. Fl. v. ii. p.* 15.

β. stem erect, leaves acute, spikes leafy scarcely cymose. *C. polyspermum, Curt. Lond. t.* 17.—*C. acutifolium, Engl. Bot. t.* 1480. *Engl. Fl. v. ii. p.* 15.

α. Cornwall.—β. not unfrequent in waste places and among rubbish. *Fl.* Aug. Sept. ⊙.—The spikes of *flowers* are more or less cymose, and leafy and leafless, upon the same individual: and I can by no means assent to the opinion that the *C. acutifolium* is permanently distinct from *C. polyspermum*, of which Wallroth, an excellent observer, says " variat foliis ovatis, obtusis, emarginatis, rubro-marginatis, acutis, cymis aphyllis et foliosis expansis." It is remarkable for the very numerous, dark brown, shining *seed-vessels*, in part only enveloped by the calyx.

*** *Leaves plane, toothed, angled or lobed, bracteas none.*

5. C. *Bonus Henrícus*, Linn. (*Mercury Goose-foot, or good King Henry*); leaves triangular arrow-shaped entire, spikes compound terminal and axillary erect leafless. *Engl. Bot. t.* 1033. *Hook. Scot. i. p.* 83. *Engl. Fl. v. ii. p.* 10.

Waste places and way-sides, frequent. *Fl.* Aug. ♃.—*Leaves* large, dark green. *Stems* 1 foot high, striated. Used, when boiled, instead of *spinach.*

H. 6. C. *úrbicum*, Linn. (*upright Goose-foot*); leaves triangular toothed, spikes long erect approaching the stem subsimple nearly leafless, flowers scattered on the spikes. *Engl. Bot. t.* 717. *Hook. Scot. i. p.* 84. *Engl. Fl. v. ii. p.* 10.

Waste places, under walls, and about towns and villages. *Fl.* Aug. ⊙. —*Stem* erect, angular. *Leaves* large, truncate or subcuneate at the base, of a light or subglaucous green, their margins deeply and irregularly toothed. *Flowers* on the spikes, in rather small, but remote, clusters; spikes very long and erect. *Seeds* (or *fruits*) large in comparison with those of the following species, " almost as large as rape-seed." (*Curtis.*)

H. 7. C. *rúbrum*, Linn. (*red Goose-foot*); leaves triangular somewhat rhomboid toothed and serrated, spikes erect compound leafy, flowers crowded on the spikes, fruit very minute. *Engl. Bot. t.* 1721. *Hook. Scot. i. p.* 84. *Engl. Fl. v. ii. p.* 11.

Dunghills and under walls. *Fl.* Aug. Sept. ⊙.—Of a darker green than the last. *Stems* frequently reddish. *Leaves* always more or less attenuated at the base, by no means truncate. *Spikes* very compound, thick. The salt (or alkali) contained in the juice of this plant crystallises upon the surface of the stem. (*Mr. W. Wilson.*)

8. C. *botryódes*, Sm. (*many-spiked Goose-foot*); "leaves triangular shortly attenuated at the base scarcely toothed, spikes erect compound leafy." *Engl. Bot. t.* 2247. *Engl. Fl. v. ii. p.* 11.

At Yarmouth, Norfolk, *Mr. Wigg;* and cliffs by the sea at Lowestoft, *Sir James E. Smith. Fl.* Aug. Sept. ⊙.—Much resembling the last, but smaller and less toothed in the margins of its leaves. This is quite different from the *C. Botrys* of *Linn.*

9. C. *murále*, Linn. (*nettle-leaved Goose-foot*); leaves ovate approaching to rhomboid acute toothed shining, spikes much branched cymose leafless. *Engl. Bot. t.* 1722. *Hook. Scot. i. p.* 84. *Engl. Fl. v. ii. p.* 11.

Under walls and in waste places near towns and villages. *Fl.* Aug. ⊙.—Branches of the *spikes* spreading. *Flowers* rather distant. *Smell* unpleasant.

10. C. *hýbridum*, Linn. (*Maple-leaved Goose-foot*); leaves cordate angulato-dentate acuminate, spikes very much branched subcymose divaricated leafless. *Engl. Bot. t.* 1919. *Hook. Scot. i. p.* 84. *Engl. Fl. v. ii. p.* 12.

Waste places and in cultivated fields, not common: about London, Colchester, Dedham (Essex), Ely, and Edinburgh. *Fl.* Aug. ⊙.—*Stems* slender. *Leaves* large, with very prominent teeth or angles. *Spikes* similar to the last, but the branches are more remote and spreading.

11. C. *álbum*, Linn. (*white Goose-foot*); leaves ovate inclining to rhomboid erose entire at the base, upper ones oblong perfectly entire, spikes branched somewhat leafy, fruit smooth. *Engl. Bot. t.* 1723. *Hook. Scot. i. p.* 84. *Engl. Fl. v. ii. p.* 13.

β. Leaves green more entire, spikes elongated more branched. *C. viride*, *Linn.*

Waste places, dunghills, &c. common. *Fl.* July, Aug. ⊙.—*Leaves* covered with a whitish and mealy substance, varying in width, and in the erosion, or blunt toothing, of the upper half of the margins of its *leaves*. When these are nearly entire, it is the *C. viride* of *Linn.*

H. 12. C. *ficifólium*, Linn. (*fig-leaved Goose-foot*); leaves ovato-oblong toothed and sinuated at the margin somewhat hastate, upper ones oblong quite entire, fruit dotted. *Engl. Bot. t.* 1724. *Engl. Fl. v. ii. p.* 13.

Dunghills and waste ground, about London and Yarmouth. *Fl.* Aug. Sept. ⊙.

H. 13. C. *glaúcum*, Linn. (*Oak-leaved Goose-foot*); leaves all oblong toothed and sinuated at the margin glaucous and mealy beneath, spikes compound leafless, seed very minutely dotted. *Engl. Bot. t.* 1434. *Engl. Fl. v. ii. p.* 14.

Waste ground, especially on a sandy soil about London. *Fl.* Aug. ⊙.

86. Béta. *Linn.* Beet.

Perianth single, half inferior, 5-cleft, persistent. *Seed* 1, reniform, imbedded in the fleshy base of the calyx.—*Nat. Ord.* Chenopodeæ. *De Cand.*—Name derived from the Celtic *bett*, according to Théis, which means *red*.

H. 1. B. *marítima*, Linn. (*Sea-Beet*); stems procumbent at the base, flowers solitary or in pairs, calycine segments entire. *Engl. Bot. t.* 285. *Hook. Scot. i. p.* 84. *Engl. Fl. v. ii. p.* 17.

Sea shores, especially in a muddy soil, England; and the South principally of Scotland. *Fl.* Aug. ♃.—*Root* large, thick and fleshy. *Stem* tall, branched, angular. *Root-leaves* subovate, succulent, entire, waved. *Spikes* of *flowers* numerous, leafy; *leaves* small, at the base of each flower or pair of flowers, which are greenish.—De Candolle says this is biennial, and distinguishes it from the cultivated *Beet*, *B. vulgaris*, in having one or two, instead of 3—4 flowers, in the axil of the upper leaves. Smith observes that, according to Linnæus, it differs from *B. vulgaris* in the keel of the calyx being entire. The present is esteemed a wholesome food when boiled. Mr. W. Wilson finds that there are always 3 styles, and that the germen is 3-seeded, that the flowers are often 3 together, and that when the seed is ripe the germen becomes purple and granulated.

87. Sálsola. *Linn.* Saltwort.

Perianth single, inferior, 5-cleft, persistent, enveloping the fruit with its base, and crowning it with its broad scariose limb. *Seed* solitary, its *cotyledon* spiral.—*Nat. Ord.* Chenodopodeæ. *De Cand.*—Name from *sal*, salt. From many of this tribe abundance of alkaline salt is obtained, as is implied by the name of our only British species.

H. 1. S. *Káli*, Linn. (*prickly Saltwort*); stems herbaceous prostrate, leaves subulate spinous scabrous, segments of the perianth margined scariose. *Engl. Bot. t.* 634. *Hook. Scot. i. p.* 85. *Engl. Fl. v. ii. p.* 18.

Sandy sea-shores, frequent. *Fl.* July. ⊙.—*Stem* angled, very much branched. *Flowers* solitary, pale, greenish, sessile, with three leaflike bracteas at the base of each.

88. Herniária. *Linn.* Rupture-wort.

Cal. deeply 5-cleft, persistent. *Stam.* 5 fertile and 5 sterile filaments, inserted upon a fleshy disk. *Stigmas* nearly sessile. *Fruit* indehiscent, 1-seeded, covered by the calyx.—*Nat. Ord.* Paronychieæ. *St. Hil.*—Named from the plant having been supposed to be useful in the cure of *Hernia*.

H. 1. H. *glábra*, Linn. (*glabrous Rupture-wort*); leaves and calyx glabrous or ciliated. *Engl. Bot. t.* 206. *Engl. Fl. v. ii. p.* 8.

Rare, about the Lizard, Cornwall, (*Ray*) whence I have specimens from the Rev. *J. S. Tozer.* Near Newmarket, *Rev. Mr. Hemsted. Fl.* June—Aug. ♃.—A small low, procumbent, shrubby plant. The "*root* penetrates deep into the soil for the size of the plant. *Stems* quite prostrate, taking root, subsequently to which all foliage disappears, and the stem is gradually converted into what appears to be a woody horizontal root." (*Tozer.*) *Stems*, at first slender, somewhat angular and hairy. *Leaves* opposite, ovate, nearly sessile, fringed almost constantly, as Mr. Tozer observes, with transparent white bristles. *Stipules* large, white, ovate, acute, membranaceous, ciliated. *Flowers* in dense, axillary, sessile clusters. *Cal.* green, somewhat striated, its segments ovate, concave, persistent, within which at the base is a fleshy perigynous disk, bearing 10 filaments, apparently all on the same line, 5 only having rounded *anthers. Capsule* indehiscent, bearing one *seed.*

2. H. *hirsúta*, Linn. (*hairy Rupture-wort*); leaves and calyx hairy. *Engl. Bot. t.* 1379. *Engl. Fl. v. ii. p.* 9.

Sandy ground near Barnet (*Hudson*); and in Cornwall, *Mr. Stackhouse*, "who was persuaded of its not being specifically distinct from *H. glabra.*"—Sprengel has therefore surely done well in uniting the two under the name of *H. vulgaris. Fl.* July. Aug. ♃.

See notes 89. Úlmus. *Linn.* Elm.

Perianth single, superior, persistent, 4—5 cleft. *Capsule* compressed, winged all round, (a *Samara*); 1-seeded.—*Nat. Ord.* Ulmaceæ. *Mirb.*—Name, according to Théis, from the Anglo-Saxon *Elm. Ulm* is, however, still the German word for this tree.

With the English species of this genus, I confess myself not to be well acquainted: and Scotland, as far as I can ascertain, possesses but one really native kind, the *Broad-leaved Elm, Ulmus montana.* Mr. Lindley appears to have made them a particular object of his study, and on him I have relied for the following characters.

1. U. *campéstris*, Linn. (*common small-leaved Elm*); leaves rhomboid-ovate acuminate wedge-shaped and oblique at the base, always scabrous above doubly and irregularly serrated, downy beneath, serrature incurved, branches wiry slightly corky, when young bright brown pubescent, fruit oblong deeply cloven naked. *Lindl. Syn. p.* 226. *Engl. Bot. t.* 1886. *Engl. Fl. v. ii. p.* 20.

Hampshire, Sussex, and especially in Norfolk, frequent. *Fl.* March, April, ♄.—A large *tree* with rugged *bark. Flowers* in dense heads, each subtended by a small scale or *bractea.* This yields the best wood of all the *Elms*, and is consequently employed for a great variety of purposes, particularly for articles that require to be exposed to moisture. —The Hertfordshire Elm is supposed by Mr. Lindley to be a *var.* of this.

2. U. *suberósa*, Ehrh. (*common Cork-barked Elm*); leaves nearly orbicular acute obliquely cordate at the base, sharply regularly and

doubly serrated always scabrous above, pubescent below, chiefly hairy in the axils, branches spreading bright brown, winged with corky excrescences, when young very hairy, fruit nearly round deeply cloven naked. *Lindl. Syn. p.* 226. *Engl. Bot. t.* 2161. *Engl. Fl. v. ii. p.* 21.—*U. campestris, Lightf. Scot. p.* 151. *Hook. Scot. i. p.* 85.

Hedges in all parts of England (*Sm.*); and in Scotland, but scarcely indigenous. *Fl.* March. ♄.—Remarkable for the cork-like covering to the branches, which is full of deep fissures.

3. U. *májor*, Sm. (*Dutch Cork-barked Elm*); leaves ovato-acuminate very oblique at the base sharply doubly and regularly serrated, always scabrous above, pubescent below with dense tufts of white hairs in the axils, branches spreading bright brown winged with corky excrescences, when young nearly smooth, fruit obovate slightly cloven naked. *Lindl. Syn. p.* 226. *Engl. Bot. t.* 2542. *Engl. Fl. v. ii. p.* 21.

Hedges in the neighbourhood of London, a doubtful native. (*Sm.*) *Fl.* March. ♄.—More corky in its bark even than the preceding, and probably not specifically distinct from it.

4. U. *carpinifolia*, Lindl. (*Hornbeam-leaved Elm*); leaves ovate acute coriaceous strongly veined simply crenate serrate slightly oblique and cordate at the base shining, but rather scabrous above, smooth beneath, branches bright brown nearly smooth, fruit —? *Lindl. Syn. p.* 226.

Four miles from Stratford-upon-Avon, on the road to Alcester. *Prof Lindley.* ♄.

5. U. *glábra*, Mill. (*smooth-leaved Elm*); leaves ovato-lanceolate acuminate doubly and evenly crenato-serrate cuneate and oblique at the base becoming quite smooth above, smooth or glandular beneath with a few hairs in the axils, branches bright brown smooth wiry weeping, fruit obovate naked deeply cloven. *Lindl. Syn. p.* 226. *Engl. Bot. t.* 2248. *Hook. Scot. i. p.* 85. *Engl. Fl. v. ii. p.* 23.

β. *glandulosa*; leaves very glandular beneath. *Lindl.*

γ. *latifolia*; leaves oblong acute very broad. *Lindl.*

Woods and hedges in Essex. In Scotland?—β. near Ludlow. *Prof. Lindley.*—γ. West Hatch, Essex. *Mr. E. Forster.* *Fl.* March. ♄. —To this species Mr. Lindley thinks that the Downton Elm and Scampston Elm of the Nurseries may probably belong.

H. 6. U. *stricta*, Lindl. (*Cornish Elm*); leaves obovate cuspidate cuneate at the base, evenly and nearly doubly crenato-serrate strongly veined coriaceous very smooth and shining above, smooth beneath with hairy axils, branches bright brown smooth rigid erect very compact, fruit — ? *Lindl. Syn. p.* 227.

β. *parvifolia*; leaves much smaller less oblique at the base finely and regularly crenated acuminate rather than cuspidate. *Lindl.*

In Cornwall and North Devon; β. less common. ♄.

7. U. *montána*, Bauh. (*broad-leaved or Wych Elm*); leaves obovate cuspidate doubly and coarsely serrated cuneate and nearly equal at the base always exceedingly scabrous above, evenly downy beneath, branches not corky cinereous smooth, fruit rhomboid-oblong scarcely cloven naked. *Lindl. Syn. p.* 227. *Engl. Bot. t.* 1887. *Hook. Scot. i. p.* 85. *Engl. Fl. v. ii. p.* 22.—*U. campestris, Willd.*

Woods and hedges, frequent. Abundant in Scotland and certainly wild. *Fl.* March, Apr. ♄.—Distinguished at first sight by its large spreading branches and broad leaves, appearing just as the "hop-like fruit" comes to perfection. A variety is called the *weeping Elm.* The wood is of inferior quality. Of this species Mr. Lindley says that the *Giant Elm* and *Chichester Elm* are varieties. He observes, too, that it is often confounded by foreign Botanists with *U. pedunculata*, a very different species, not found in England, and closely related to *U. rubra* of N. America.

(*See* Scleranthus in CL. X. Polygonum in CL. VIII.)

ORD. III. TRIGYNIA. 3 *Styles.*

* *Flowers superior.*

90. VIBURNUM. *Linn.* Guelder-rose.

Cal. 5-cleft. *Cor.* of 1 petal, 5-lobed. *Berry* inferior, usually 1-seeded. (*Leaves simple*).—*Nat. Ord.* CAPRIFOLIACEÆ. *Juss.* —Name of doubtful origin.

H. 1. V. *Lantána*, Linn. (*mealy Guelder-rose or Wayfaring tree*); leaves elliptico-cordate serrated veined downy beneath. *Engl. Bot. t.* 331. *Hook. Scot. i. p.* 96. *Engl. Fl. v. ii. p.* 107.

Woods and hedges, especially in a chalky or limestone soil. Dunglass glen, Scotland. *Fl.* June. ♄.—A large *shrub*, much branched, with the young shoots very downy. *Flowers* in large dense *cymes*, white. *Cal.* teeth very minute. *Berry* purplish black. The young shoots are much esteemed in the Crimea for the tubes of Tobacco pipes. (*Pallas.*).

u. 2. V. *Ópulus*, Linn. (*common Guelder-rose, or Water Elder*); leaves glabrous three-lobed acuminate and serrate, petioles with glands. *Engl. Bot. t.* 332. *Hook. Scot. i. p.* 96. *Engl. Fl. v. ii. p.* 107.

Woods and coppices, not unfrequent in England, and Scotland, as far north as Inverness. (*Mr. G. Anderson*). *Fl.* June, July. ♄.—Small *tree*, very glabrous. *Leaves* large, subcordate, broad. *Cymes* large, with white *flowers*; the perfect ones small and resembling the last; abortive ones in the circumference, consisting of a very large, plane, 5-lobed *petal*, without either stamen or pistil. *Flowers* erect. *Berries* reddish purple, drooping.

91. SAMBÚCUS. *Linn.* Elder.

Cal. 5-cleft. *Cor.* of 1 petal, rotate, 5-lobed. *Berry* inferior, 3 or 4 seeded. (*Leaves pinnated*).—*Nat. Ord.* CAPRIFOLIACEÆ. *Juss.*—Name, from σαμϐυκη, a musical instrument, in the construction of which this wood is said to have been employed.

1. S. *Ébulus*, Linn. (*dwarf Elder or Dane-wort*); cymes with 3 principal branches, leaflets lanceolate, stipules foliaceous, stem herbaceous. *Engl. Bot. t.* 475. *Hook. Scot. i. p.* 96. *Engl. Fl. v. ii. p.* 108.

Way sides and in waste places, not uncommon in England and Scotland. Ireland, at Powerscourt, Lambay and Kenmare, *Mr. J. T. Mackay. Fl.* July. ♃.—*Stem* 2—3 feet high, angular and furrowed. *Leaves* pinnate; *leaflets* serrated. *Cyme* large, terminal, purplish. *Anthers* large, purple. *Berries* sphærical, black. The plant has a fetid smell and is violently purgative.

2. S. *nígra*, Linn. (*common Elder*); cymes with 5 principal branches, leaflets ovate, stem arboreous. *Engl. Bot. t.* 476. *Hook. Scot. i. p.* 96. *Engl. Fl. v. ii. p.* 109.

β. Leaves laciniated.

Woods, coppices, &c. frequent. β. Near Ayr, *Mr. James Wilson. Fl.* June. ♄.—A small *tree*, having the stems and branches full of pith. *Leaves* pinnated; *leaflets* serrate. *Cymes* terminal, large, cream-coloured, smelling unpleasantly. *Anthers* small, yellow. *Berries* purple-black, sometimes white. The bark is used by country practitioners medicinally, and the fruit is employed for wines and preserves.

** *Flowers inferior.*

92. STAPHYLÉA. *Linn.* Bladder-nut.

Cal. 5-partite, coloured, with an urceolate disk at the base. *Pet.* 5. Styles 2—3. *Capsule* membranaceous, of 2—3 cells.—*Nat. Ord.* CELASTRINEÆ. *Br. De Cand.* STAPHYLEACEÆ. *Lindl.*—Name from σταφυλη, a *bunch of grapes*, its flowers being in racemes.

1. S. *pinnáta*, Linn. (*common Bladder-nut*); leaves pinnated, petioles without glands, styles 2, capsules bladdered. *Engl. Bot. t.* 831. *Engl. Fl. v. ii. p.* 111.

In Yorkshire in thickets and hedges; truly indigenous (*Mr. Hailstone*): about Pontefract, but not certainly wild according to *Ray*. About Ashford, Kent, *Parkinson*. It is frequent in gardens. *Fl.* June. ♄.—A *shrub*, having the *leaves* pinnated with from 5—7, ovate, suddenly acuminated, finely serrated *leaflets*, and graceful, white, drooping *racemes* of *flowers*, which are succeeded by large and curious, obovate, bladdered *fruits*.

93. TÁMARIX. *Linn.* Tamarisk.

Cal. 5-partite, persistent. *Cor.* of 5 petals. *Stam.* 5—10. *Stigmas* sessile, feathery. *Caps.* 1-celled, 3-valved, many-seeded. *Seeds* pappose.—*Nat. Ord.* TAMARISCINEÆ. *Desvaux.*—Named from the *Tamarisci*, a people who inhabited the banks of the *Tamaris*, now *Tambra*, in Spain, where the Tamarisk abounds.

H. 1. T. *gállica*, *Linn.* (*French Tamarisk*); leaves minute amplexicaul appressed acute, spikes lateral somewhat panicled slender much longer than broad. *Engl. Bot. t.* 1318. *Engl. Fl. v. ii. p.* 112.

Rocks, cliffs and sandy shores by the sea about the Lizard and St.

Michael's, Cornwall, where Mr. Tozer tells me it is scarcely wild, though naturalized in many places in the county and plentiful. It is called "*Cypress*" by the common people. *Rev. J. S. Tozer.* About Hurst Castle and Hastings. Near Languard Fort: but evidently planted. *Fl.* July. ♄.—A slender upright growing *shrub*, with red branches, glaucous *leaves*, pink spikes of *flowers* and comose *seeds.* Frequent in shrubberies.

94. Corrigíola. *Linn.* Strapwort.

Cal. inferior, of 5 leaves, permanent. *Pet.* 5, not exceeding the calyx. *Seed* solitary, naked.—*Nat. Ord.* Paronychieæ. *St. Hil.*—Name from *corrigia*, a *strap* or *thong*, formerly applied to the *Polygonum aviculare* on account of its long pliant stems; and now to a plant which is somewhat similar to it in habit.

1. C. *littorális*, Linn. (*Sand Strapwort*); stem leafy among the flowers. *Engl. Bot. t.* 668. *Engl. Fl. v. ii. p.* 113.

Rare on the south-western coast of England. On Slapham sands and near the Star-point, Devon; and at Helston, Cornwall. *Fl.* July, Aug. ⊙.—*Stems* numerous from the top of the root, spreading, slender. *Leaves* linear, obtuse, somewhat fleshy and very glaucous. *Stipules* small, membranaceous, white. *Flowers* small, in branching axillary small clusters, from the axils of the upper leaves.

(*See* Chenopodium *in* Ord. II. Stellaria *in* Cl. X.)

ORD. IV. TETRAGYNIA. 4 *Styles.*

95. Parnássia. *Linn.* Grass of Parnassus.

Cal. deeply 5-cleft. *Petals* 5. *Nectaries* 5, heart-shaped, fringed with globular-headed filaments. *Capsule* 1-celled, 4-valved, each valve bearing a longitudinal linear receptacle with numerous *seeds.*—*Nat. Ord.* Droseraceæ. *De Cand.* Saxifrageæ. *Sm. Lindl.*—Named from Mount Parnassus, to which place indeed, the plant is by no means peculiar.

1. P. *palústris*, Linn. (*common Grass of Parnassus*); bristles of the nectary 9—13, leaves cordate, cauline one amplexicaul. *Engl. Bot. t.* 82. *Hook. Scot. i. p.* 96. *Engl. Fl. v. ii. p.* 114.

Bogs and waste places, frequent. *Fl.* Aug.—Oct. ♃.—*Leaves* mostly radical, on long footstalks, cordate, entire, nerved; one on the stem below the middle, sessile. *Stem* angular, from 1 inch (as I have seen it in N. Ronaldsha, Orkney, with perfect flowers) to 8—10 inches high. *Flowers* solitary, terminal, large, yellowish white, handsome. *Petals* broadly obovate. *Nectaries*, each an obcordate scale, opposite the petals, fringed with white hairs along the margin which are terminated by a yellow pellucid globular gland.

ORD. V. PENTAGYNIA. 5 *Styles.*

96. Státice. *Linn.* Thrift.

Cal. of 1 piece, funnel-shaped, plaited, dry and membranaceous. *Pet.* 5, united at the base, bearing the stamens. *Capsule* with 1 seed invested with the calyx.—*Nat. Ord.* Plumbagineæ. *Juss.* —Name from *στατιζω*, to *stop*, from its supposed qualities in checking dysentery.

* *Flowers collected into a rounded head.* (Armeria, *De Cand.*)

H 1. S. *Arméria*, Linn. (*common Thrift or Sea Gilliflower*); leaves linear, scape simple bearing a rounded head, awns of the calyx short. *Engl. Bot. t.* 226. *Hook. Scot. i. p.* 97. *Engl. Fl. v. ii. p.* 115.

Muddy sea-shores, among rocks by the sea-side and upon the tops of our highest mountains. *Fl.* July, Aug. ♃.—*Leaves* all radical, numerous. *Heads* of flowers rose-coloured, intermixed with scales and having, besides, a brown, membranous, 3-leaved *involucre*, terminating below in a sheathing, jagged covering to the upper part of the scape. *

* *Flowers unilateral on a paniculated scape.* (Taxanthema, *Neck. Br.*)

H 2. S. *Limónium*, Linn. (*spreading-spiked Thrift or Sea Lavender*); leaves elliptic-lanceolate stalked mucronate single-ribbed, scape angular with a much branched spreading corymb at the top, calyx with deep acute plaited segments and intermediate teeth. *Engl. Bot. t.* 102. *Hook. Scot. i. p.* 97. *Engl. Fl. v. ii. p.* 116. (*excl. syn.* β).

Frequent on the muddy shores and salt marshes of England and Ireland: rare in Scotland, and confined, I believe, to the southern coasts. *Fl.* July, Aug. ♃.—*Leaves* 4 inches to a span high, ½ or ¾ths as tall as the scape, single-ribbed with lateral oblique nerves, mucronated: the mucro is recurved, being "a continuation of the margin of the leaf, and is channelled. *Scape* angular, often furrowed above, with a coarse uneven surface." *Panicle* truly corymbose and level-topped, with spreading, or sometimes, recurved branches, in which respect it differs remarkably from the following species. *Cal.* as Mr. Wilson observes, "with deep, ovato-oblong, toothed, acute, spreading segments, reflexed in the margin and with intermediate teeth. *Anthers* yellow. *Pollen* with 3 pellucid dots, compressed. *Germen* granulated. *Stigmas* rough with prominent but minute papillæ."—Notwithstanding the similarity of appearance in the blue blossoms of this plant to those of the Lavender, it is still but

> "the sea-lavender 'which lacks perfume.'"
>
> Crabbe.

The flowers, Mr. Gerard Smith says, are sometimes white on the north coast of Cornwall.

H 3. S. *spathuláta*, Desf. (*upright-spiked Thrift*); leaves spathulate with a short mucro glaucous 3-ribbed at the base, scape branched from below the middle, panicle elongated, branches distichous, spikes erect, calyx with plane blunt segments without intermediate teeth. *Desf. Fl. Atl. v. i. p.* 275. (*not Willd.?*) *Sims, in Bot. Mag. t.* 1617. (*excellent*).—S. *cordata*, *G. E. Smith, in Cat. of Pl. of Kent, p.* 18, *t.* 2, *f.* 2. (*vix Linn.*) S. *reticulata*, *Hook. Scot. i. p.* 97. (*excl. syn.*) S. *Limonium*, β. *Engl. Fl. v. ii. p.* 116.—*Limonium minus*, *Ray, syn. p.* 202.

H

* . S. plantaginea . App . 13 .

Coast of Kent in several places, *Gerard*, and *Rev. G. E. Smith.* I gathered it on the Shakspeare Cliff, Dover, in 1806. Harwich, *Ray.* Mull of Galloway, Scotland, *Mr. Goldie.* Rocks near Holyhead, and St. Bees' Head, near Whitehaven, *Mr. W. Wilson. Fl.* Aug. ♃.—Much credit is due to the Rev. G. E. Smith who published in 1829, in the work above quoted, and clearly distinguished, this plant from *S. Limonium;* and no less to Mr. W. Wilson and Mr. Goldie, both of whom had previously sent it to me as distinct from *S. Limonium:* though they at first fell into the very natural error of considering it to be the *S. reticulata.*[1] Mr. Wilson has so well recorded its discriminating characters in his letter to me in August 1828, that I should do him injustice were I not to introduce them here. "The *leaves* (which are coriaceous and short in proportion to the height of the scape), have the *midrib* somewhat pellucid when held between the eye and the light, and there are besides, two parallel *ribs* or *nerves* extending beyond the middle: *footstalks* bordered, so as to constitute of the whole a spathulate leaf. *Mucro* very small, always dorsal, not formed of a continuation of the (cartilaginous) margin, for that is continued round the apex of the leaf, and above the mucro which is not channelled. *Scape* round, with an even surface, a little zigzag or wavy above, taking a fresh direction at every branch of the panicle. *Anthers* white. *Pollen* with 4—5 pellucid dots, compressed. *Germen* smooth. *Stigmas* covered with a reticulation of vesicles, not prominent, much larger than the papillæ of *S. Limonium.*"

The lower branches of the panicle are now and then abortive or destitute of flowers, in both species.

I do not know if we have any decided authority for considering this plant to be the *S. cordata*[2] of Linnæus; a plant with which Sir James Smith seemed to be unacquainted, if we may judge from his saying nothing of it in Rees' Cyclop. The name, too, is decidedly objectionable. It quite agrees with Desfontaines' *S. spathulata*, and is admirably figured in the Botanical Magazine, and mentioned as a native of Barbary. Again I cannot satisfy myself that the *S. oleifolia*, Pourr. and *globulariæfolia*, Desf. and *Willdenoviana*, Poir. (*spathulata, Willd. in Hort. Berol. t.* 63.) are really distinct from the present species:—to these I might almost add *S. auriculifolia.*

4. S. *reticuláta*, Linn. (*matted Thrift*); leaves spathulate, scapes paniculated almost from the base with numerous slender zigzag distinctly bracteated branches, of which the upper ones only bear flowers, flowers crowded. *Engl. Bot. t.* 328. *Engl. Fl. v. ii.* 116. (*excl. Syn. of Hook. Scot.*)

Muddy salt-marshes, but rare. Norfolk, principally at Cley, and Wisbeach. Portmarnock, Ireland, *Mr. J. T. Mackay.* (May not this be *S. spathulata?*) *Fl.* July, Aug. ♃.—Much smaller than either of the two last; with very short *leaves.* *Scapes* several from the same root, remarkable for their numerous, slender, entangled, barren branches, and small, crowded *flowers,* in secund, terminal *spikes.* The finest specimens I have seen of this species are sent to me by Professor Henslow from Cley, gathered July 1829. They are 6 inches long and with such numerous barren branches as to satisfy me that the *S. caspia*, of Willdenow, is the same; as Marshal Bieberstein had rightly determined. Sprengel quotes under *S. reticulata*, *S. virgata*, Willd. and *S. viminea*, Schrad. *Statice* is a genus that would amply repay the labour required in its illustration by the beauty and singularity of its species. Above 70 species (including "*Armeria*") are enumerated by Sprengel.

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[1] Hence the *S. reticulata* was introduced into the Flora Scotica, upon the authority of Mr. Goldie: for I had not seen his specimen till after the publication of that work.

[2] My specimens of *S. cordata*, in Gouan's Herbarium, which I have reason to believe are the true ones, and others from Saltzman, gathered at Gibraltar, have the leaves without a mucro and with a deep notch at the extremity, and the branches of the panicle are patent. Our species has the leaves usually acute, as well represented by the *Rev. G. E. Smith, t. ii. f.* 4.

97. LÍNUM. *Linn.* Flax.

Cal. of 5 leaves, persistent. *Pet.* 5. *Caps.* globose, mucronate, with 10 valves and 10 cells. *Seeds* ovate, compressed.—*Nat. Ord.* LINEÆ. *De Cand.*—Named from *Lin*, *thread*, in Celtic, (*Théis*); the parent of many words in Latin, English, and French.

* *Leaves alternate.*

H. 1. L. *usitatíssimum*, Linn. (*common Flax*); leaves lanceolate, calycine leaves ovate acute 3-nerved, petals crenate, stem subsolitary. *Engl. Bot. t.* 1357. *Hook. Scot. i. p.* 97. *Engl. Fl. v. ii. p.* 118.

Corn fields, not unfrequent. *Fl.* July. ⊙.—One or one foot and a half high, slender, branched above. *Leaves* distant. *Flowers* large, purplish-blue.—This, as may be inferred from its name, yields in the strong fibres of its bark the valuable *flax* of commerce, while from the seed a precious oil is expressed, known by the name of *Lint-seed oil.* These seeds, too, are highly mucilaginous, and much employed in poultices, fomentations, &c.

H. 2. L. *perénne*, Linn. (*perennial blue Flax*); leaves linear acute, calycine leaves obovate obtuse obscurely 5-ribbed glabrous, stems numerous from the same root. *Engl. Bot. t.* 40. *Engl. Fl. v. ii. p.* 118.

dimorphic long & short pistils

Chalky hills: Cambridgeshire, (Hinton, *Rev. Prof. Henslow*), Northamptonshire, Westmoreland, Norfolk and Suffolk, (*Rev. G. R. Leathes*), Near Monkstown, Ireland, *Mr. James Drummond.* *Fl.* June, July. ♃.

H. 3. L. *angustifólium*, Huds. (*narrow-leaved pale Flax*); leaves linear-lanceolate acuminate 3-nerved, calycine leaves elliptical three-ribbed mucronate as well as the capsule. *Engl. Bot. t.* 381. *Engl. Fl. v. ii. p.* 119.

Sandy and chalky pastures, principally near the sea. Kent, Sussex, Norfolk, Suffolk, near Liverpool, *Mr. J. Shepherd*, Cornwall; and near Plymouth, *Mr. Banks.* About Dublin, *Mr. J. T. Mackay.* *Fl.* July. ♃.—All the three species of this division have a great similarity in their habit. The best characters, as observed by Sir James Smith, are taken from the calyx. In the present the *petals* are of a paler blue than in the preceding species, and smaller in proportion to the size of the calyx.

** *Leaves opposite.*

4. L. *cathárticum*, Linn. (*purging Flax*); leaves opposite

oblong, stem dichotomous above, petals acute. *Engl. Bot. t.* 382. *Hook. Scot. i. p.* 97. *Engl. Fl. v. ii. p.* 119.

Pastures, everywhere, abundant. *Fl.* June, July. ⊙.—*Stem* slender, upright, 2—6 inches high. *Flowers* gracefully drooping before expansion, white, small.

98. SIBBÁLDIA. *Linn.* Sibbaldia.

Cal. in 10 alternately large and small segments. *Pet.* 5, inserted on the calyx. *Capsules* 5, indehiscent, in the bottom of the calyx, 1-seeded. (The number of stamens is very liable to vary, and the capsules are sometimes 10.)—*Nat. Ord.* ROSACEÆ. *Juss.*—Name given in honour of *Robert Sibbald*, who wrote on the Nat. History of Scotland about the latter end of the 17th century, and who published a figure of our Scottish species of this genus.

1. S. *procúmbens*, Linn. (*procumbent Sibbaldia*); leaves ternate, leaflets wedge-shaped tridentate. *Engl. Bot. t.* 175. *Hook. Scot. i. p.* 97. *Engl. Fl. v. ii. p.* 120.

Near, and upon the summits of the Highland mountains of Scotland, abundant. *Fl.* July. ♃.—A small, glaucous, slightly hairy *plant*, woody at the base and roots. *Petals* small, yellow, sometimes wanting. *Stam.* 5—7. *Pistils* 5—8 or 10. Nearly allied to *Potentilla*, as Mr. W. Wilson well observes.

(*See* Cerastium *and* Spergula *in* CL. X.)

ORD. VI. HEXAGYNIA. 6 *Styles.*

French "Rossolis". +

99. DRÓSERA. *Linn.* Sun-dew.

Italian Rugiada del Sole.

Cal. 5-cleft. *Pet.* 5. *Caps.* 1-celled, 3-valved, many-seeded. (*Plants with leaves clothed with beautiful glandular hairs*).—*Nat. Ord.* DROSERACEÆ. *De Cand.*—Name derived from δροσος, *dew.* The glands exude a pellucid fluid, which makes this plant appear as if it were covered with dew. In Latin *Ros-solis*, the same as the English *Sun-dew.*

H. 1. D. *rotúndifolia*, Linn. (*round leaved Sun-dew*); leaves radical orbicular spreading, petioles hairy, seeds chaffy. *Engl. Bot. t.* 867. *Hook. Scot. i. p.* 98. *Engl. Fl. v. ii. p.* 122.

Bogs and moist heathy ground, frequent. *Fl.* July. ♃.—*Leaves*, in all our species, covered with red pedunculated viscid *glands*, which retain insects. *Scape* 2—5 inches high, glabrous. *Flowers* racemed, secund, small. *Styles* variable in number.

H. 2. D. *longifólia*, Linn. (*spathulate-leaved Sun-dew*); leaves radical spathulate very obtuse erect on long glabrous petioles, seeds with a compact rough coat not chaffy. *Engl. Bot. t.* 868. *Hook. Scot. i. p.* 98. *Engl. Fl. v. ii. p.* 123.

Bogs and moist heathy grounds, not uncommon, but more frequent in the south than in the north. South of Ireland, *Mr. J. T. Mackay*, *Fl.* July. ♃.—Well distinguished from the following, by its rough, and not loose, coat to the *seeds*, a character long ago observed and figured by

+ formerly used as rennet, possesses blistering properties.
employed in the Italian liqueur, "Rosoli".

Schkuhr and confirmed by Mr. W. Wilson. *Styles* often 8; *stigmas* deeply cloven. Mr. W. Wilson detected a curious monstrosity in the flower of this, having "one germen enclosed within another, and a third within the second; the external one open at the top and fringed with styles and abortive anthers. Rudiments of seeds lined the inner surface as usual. The inner germen had styles and anthers intermixed, and was closed at the top, the innermost was more imperfectly formed, but with rudiments of styles. There were 8 petals and about 6 perfect stamens in the flower." The same acute Botanist, too, observed that "specimens[1] gathered in Cheshire abounded in colouring matter and stained the paper in which they were placed, after having been dried, of a deep, rusty red colour, which also penetrated several contiguous sheets:—and that D. *rôtundifolia*, on the same sheet, was found to possess the same property, but in a much slighter degree."

3. D. *ánglica*, Huds. (*great Sun-dew*); leaves radical linear-spathulate erect on very long glabrous petioles, seeds with a loose chaffy coat. *Engl. Bot. t.* 369. *Hook. Scot. i. p.* 98. *Engl. Fl. v. ii. p.* 123.

On bogs in several parts of Scotland, as far north as Ardnamurchan, *W. C. Trevelyan, Esq.*: near Warrington, Lancashire, *Mr. W. Wilson.* Bedfordshire, Norfolk, and probably in other counties. *Fl.* July, Aug. ♃.—This has much longer and narrower *leaves* than the last, and would better deserve the name of *longifolia.* But that character has never been considered (though I believe very constant) sufficient to separate this species from the last; and a general opinion has prevailed, with myself as well as others, that the present was but a variety of *longifolia.* Now, however, that Mr. W. Wilson has observed the true nature of its seed, an important and invariable character is established. Here the seed, as in *Pyrola* and *Orchis* and in *D. rotundifolia*, has a very loose, reticulated, even coat. In D. *longifolia* the coat firmly adheres to the rest of the seed, and is rough or papillose. "Embryo at the lower end of the seed, dicotyledonous."—*Wilson.*

ORD. VII. POLYGYNIA. *Many Styles.*

100. MYOSÚRUS. *Linn.* Mouse-tail.

Cal. of 5 leaves, prolonged at the base. *Pet.* 5, their *claws* tubular (nectariferous). *Capsules* indehiscent (*seeds* of most authors), 1-seeded, collected upon a very long columnar receptacle.—*Nat. Ord.* RANUNCULACEÆ. *Juss.*—Name, μυς, μυος, a *mouse*, and ουρα, a *tail*, from the elongated receptacle of germens or seed-vessels.

H. 1. M. *mínimus*, Linn. (*common Mouse-tail*). *Engl. Bot. t.* 435. *Hook. Scot. i. p.* 98. *Engl. Fl. v. ii. p.* 124.

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[1] With me, in the Herbarium, both *D. anglica* and *D. longifolia* retain the property of staining the paper of the sheets that lie next to them for a great number of years; so that the form of the leaves, scapes, and flowers are distinctly represented through to the backs of the sheets on which they are fastened, and upon the backs of several sheets which have, at different times, lain above them: and this though the specimens are perfectly dry.

Corn-fields and waste places in England, in a gravelly or chalky soil. Scotland, *Sibbald;* but I have never seen wild specimens, nor does it appear to be a native of Ireland. *Fl.* May, ⊙.—A small *plant*, from 2—6 inches in height. *Leaves* erect, narrow, linear-spathulate, fleshy. *Scapes* slender, bearing a single flower, small, greenish. *Receptacle* with the numerous *germens*, at first short, oblong, then lengthening out to from 1—3 inches, and resembling a mouse's tail.

(*See* Ranunculus *Ficaria*, in CL. XIII.)

CLASS VI. HEXANDRIA. 6 *Stamens* (*equal in height*).

ORD. I. MONOGYNIA. 1. *Style.*

* *Flowers complete, having a double perianth, Cal. and Cor. Gen.* 1—3.

1. BÉRBERIS. *Linn.* Barberry.

Cal. of 6 concave, coloured, inferior, deciduous leaves. *Pet.* 6, each with two glands at the base. *Berry* 2—3 seeded.—*Nat. Ord.* BERBERIDEÆ. *Vent.*—Name; *Berbērys*, according to Théis, is the Arabic name of this fruit.

H. 1. B. *vulgáris*, Linn. (*common Barberry*)*;* racemes pendulous, spines 3-forked, leaves obovate ciliato-serrate. *Engl. Bot. t.* 49. *Hook. Scot. i. p.* 111. *Engl. Fl. v. ii. p.* 184.

Copses, woods and hedges, in England and Scotland. Near Fermoy, Ireland, *Mr. J. Drummond. Fl.* June, ♄.—*Shrub* with upright, twiggy stems. *Flowers* yellow, smelling disagreeably. *Stamens* highly curious in their formation and in their elastic property when touched. *Berries* oblong, a little curved, red, tipped with the black *style:* they are agreeably acid and much used for preserves.

2. FRANKÉNIA. *Linn.* Sea-Heath.

Cal. of 1 piece, inferior. *Cor.* of 6 petals. *Stigmas* 3. *Caps. of* 1 cell, 3—4 valved; *valves* bearing many *seeds* at their margins. —*Nat. Ord.* FRANKENIACEÆ. *St. Hil.*—Named from *John Franken*, a Swedish botanist and Professor of Medicine at Upsal who died in 1661.

H. 1. F. *lǽvis*, Linn. (*smooth Sea-Heath*)*;* leaves linear revolute at the margin glabrous ciliated at the base. *Engl. Bot. t.* 205. *Engl. Fl. v. ii. p.* 186.

Muddy salt-marshes, about Yarmouth and other of the eastern coasts of England. Isle of Sheppey, Kent, *Rev. Prof. Henslow. Fl.* July, ♃.—A humble procumbent *plant*, with wiry *stems* and numerous fascicled *leaves. Flowers* pale rose-coloured, terminal or from the axils of the branches.

2. F. *pulverulénta*, Linn. (*powdery Sea-Heath*)*;* leaves obovate retuse glabrous above, downy and pulverulent beneath, petiole ciliated. *Engl. Bot. t.* 2222. *Engl. Fl. v. ii. p.* 186.

Found in the time of Dillenius and Hudson on the sea-coast of Sussex. *Fl.* July. ⊙.—*Stems* prostrate, repeatedly dichotomous. *Flowers* smaller than in the preceding.

3. PÉPLIS. *Linn.* Purslane.

Cal. campanulate, with 6 large and 6 alternating smaller teeth. *Pet.* 6, inserted upon the calyx, often wanting. *Caps.* superior of 2 cells, and many seeds.—*Nat. Ord.* LYTHRARIÆ. *Juss.*—Name from πεπλιον, anciently applied to the genus *Portulaca,* now to one somewhat similar in habit.

H. 1. P. *Pórtula,* Linn. (*Water Purslane*); flowers axillary solitary, leaves obovate. *Engl. Bot. t.* 1211. *Hook. Scot. i. p.* 111. *Engl. Fl. v. ii. p.* 187.

Watery places, not unfrequent. *Fl.* July, Aug. ⊙.—*Plant* prostrate, 5—6 inches long, creeping, little branched. *Leaves* opposite, glabrous, tapering at the base.

(*See* Lythrum *hyssopifolium* in CL. XII.)

** *Perianth single, superior.* Gen. 4—6.

4. LEUCÓJUM. *Linn.* Snowflake.

Perianth petaloid, of 6 campanulate, superior, equal pieces, a little thickened at the point. *Flowers* from a *spatha.*—*Nat. Ord.* AMARYLLIDEÆ. *Br.*—Name from λευκος, *white,* and ιον, *a violet.* But the name λευκοιον was by the Greeks applied to the *Wall-flower.*

H. 1. L. *æstívum,* Linn. (*Summer Snowflake*); spatha many-flowered, style club-shaped. *Engl. Bot. t.* 621. *Engl. Fl. v. ii. p.* 130.

Moist meadows, near London; in Suffolk, Berkshire, Westmoreland, Northumberland, Kent, &c. It is difficult to say where this plant is really wild, and where not. *Fl.* May. ♃.—*Root* bulbous. *Leaves* long, linear, keeled; *scape* 2-edged. *Flowers* white, drooping.

5. GALÁNTHUS. *Linn.* Snowdrop.

Perianth petaloid, of 6 pieces, the three outer spreading, three inner smaller, erect, emarginate. *Flowers* from a *spatha.*—*Nat. Ord.* AMARYLLIDEÆ. *Br.*—Name from γαλα, *milk,* and ανθος, a *flower.* The French name, *perce-neige,* is very expressive.

H. 1. G. *nivális,* Linn. (*Snowdrop*). *Engl. Bot. t.* 19. *Hook Scot. i. p.* 100. *Engl. Fl. v. ii. p.* 129.

Woods, orchards, meadows, pastures, &c. in very many places in England, Scotland and Ireland, but scarcely indigenous. *Fl.* Feb. ♃. *Bulb* ovate. *Leaves* 2, broadly linear, glaucous-green. *Flowers* solitary, drooping, handsome, rendering this plant a general favourite.

> "Like pendent flakes of vegetating snow
> The early herald of the infant year,
> Ere yet the' adventurous Crocus dares to blow
> Beneath the orchard boughs thy buds appear."

6. Narcíssus. *Linn.* Daffodil. Affodylle - "cometh early." Old English.

Perianth superior, coloured, funnel-shaped, with a spreading 6-partite limb, and a campanulate or cup-shaped crown or *nectary*, within which are the stamens. *Flowers* from a *spatha.*—*Nat. Ord.* Amaryllideæ. *Br.*—Name from ναρκη, *stupor*, in allusion to the powerful and injurious smell of the flowers. More immediately derivable from the youth *Narcissus*, who was fabled to be changed into this flower, an inhabitant sometimes of watery places, by the banks of streams.

H. 1. N. *Pseudo-narcíssus*, Linn. (*common Daffodil*); spatha single-flowered, nectary campanulate erect crisped at the margin obsoletely 6-cleft, as long as the ovate segments of the perianth. *Engl. Bot. t.* 17. *Hook. Scot. i. p.* 100. *Engl. Fl. v. ii. p.* 132.

Moist woods and thickets. Rare in Scotland: about Culross and Dunoon; but scarcely indigenous. Near Templeogue, Ireland; *Mr. J. T. Mackay. Fl.* March, Apr. ♃.—*Flowers* large, yellow. - In Cornwall called "Lent lilies". root poisonous.

2. N. *poéticus*, Linn. (*poetic Narcissus*); spatha mostly single flowered, nectary very short convex membranous and crenate at the margin, leaves with an obtuse keel. *Engl. Bot. t.* 275. *Engl. Fl. v. ii. p.* 131.

Heathy open fields on a sandy soil, said to be wild in Norfolk and in Kent. *Fl.* May. ♃.—Larger than the last, with a *flower* of a very different structure, and with a deeply coloured border to the *nectary.* Its beauty and delicious odour have recommended it to general culture. Smith says this is the true *Narcissus* of the Greek writers, as clearly described by Dioscorides.

H. 3. N. *biflórus*, Curt. (*pale Narcissus*); spatha 2-flowered, nectary very short concave membranous and crenate at the margin, leaves acutely keeled. *Engl. Bot. t.* 276. *Engl. Fl. v. ii. p.* 132.

Sandy fields, in Kent and Herts; and about Dublin, frequent, *Mr. J. T. Mackay. Fl.* April, May. ♃.—Similar to the last in the general form of the *flowers*, but smaller, not of so pure a white, and without the coloured border to the nectary, with a less agreeable scent.

*** *Perianth single, inferior, petaloid or, rarely, herbaceous.* 7—19.

7. Convallária. *Linn.* Lily of the Valley, or Solomon's Seal.

Perianth inferior, petaloid, deciduous, 6-cleft, globose or cylindrical. *Berry* 3-celled. *Seeds* 1—2 in each cell.—*Nat. Ord.* Smilaceæ. *Br.*—Name; *convallis*, a *valley*, from the locality of the species.

H 1. C.+ *majális*, Linn. (*Lily of the Valley*); scape semi-cylindrical, leaves 2 ovato-lanceolate radical, flowers racemed globoso-campanulate drooping. *Engl. Bot. t.* 1035. *Hook. Scot. i. p.* 103. *Engl. Fl. v. ii. p.* 154.

Woods and coppices, particularly in a light soil: frequent in England

+ assumed formerly to be a specific in apoplexy,
according to the "Doctrine of Signatures". Coles says.
"As that disease is caused by the dropping of humours into
"the ventricles of the brain, so the flowers of this lily, hanging
"on the plants as if they were drops, are of wonderful use herein."

and in several places in Scotland. *Fl.* May. ♃.—*Flowers* very pure white, fragrant, segments curved back. *Berries* red, globose.

H. + 2. C. *verticilláta*, Linn. (*narrow-leaved Solomon's seal*); leaves lanceolate whorled, flowers cylindrical. *Engl. Bot. t.* 128. *Hook. Scot. i. p.* 103. *Engl. Fl. v. ii. p.* 154.

Woods and glens, very rare, and only found in Scotland. Den of Rechip, 4 miles N.E. of Dunkeld, *Mr. A. Bruce.* It has been pointed out to *Mr. James Macnab* as indigenous in the woods at Blair in Athol. *Fl.* June. ♃.—Two feet high. *Leaves* numerous, bright green, 3—4 in a whorl. *Flowers* solitary or with branched footstalks, drooping. In Lapland, Wahlenberg tells us this plant grows in spots so wild as scarcely to be accessible to any creatures but the bears.

H. 3. C. *multiflóra*, Linn. (*common Solomon's seal*); leaves ovato-elliptical alternate half embracing the rounded stem, peduncles axillary one or many-flowered, flowers cylindrical, filaments hairy, style flexuose. *Engl. Bot. t.* 279. *Hook. Scot. i. p.* 104. *Engl. Fl. v. ii. p.* 156.

Woods and coppices, in various parts of England and the south of Scotland: also at Kingcusie, 7 miles from Aberdeen, *Mrs. Boswell. Fl.* May, June. ♃.—Two feet high, bare of leaves below. *Leaves* large, marked with longitudinal nerves, secund; the *flowers* drooping in an opposite direction, white, greenish at the tips. *Berries* bluish-black.

H. 4. C. *Polygonátum*, Linn. (*angular Solomon's seal*); leaves ovato-elliptical alternate half embracing the angular stem, peduncles mostly single-flowered, flowers cylindrical, filaments glabrous, style straight. *Engl. Bot. t.* 280. *Engl. Fl. v. ii. p.* 155.

Woods in England, very rare; in Yorkshire, Somersetshire, and Kent. *Fl.* May, June. ♃.—Smaller than the last. *Flowers* greener, fragrant.

8. Allium. *Linn.* Onion.

Perianth inferior, petaloid, of 6 ovate spreading pieces. *Caps.* triquetrous. (*Flowers umbellate, arising from a 2-leaved spatha*).—*Nat. Ord.* LILIACEÆ; Trib. II. ASPHODELEÆ. *De Cand.*—Name from the Celtic *all,* which signifies *acrid, burning.* (*Théis.*)

* *Stem-leaves plane.*

1. A. *Ampeloprásum*, Linn. (*great round-headed Garlic*); umbels globose without bulbs, leaves linear keeled acuminate, 3 alternate stamens deeply 3-cleft. *Engl. Bot. t.* 1657. *Engl. Fl. v. ii. p.* 133.

Rare; on Holmes Island in the Severn, *Ray. Fl.* Aug. ♃.—2—3 feet high, with broad acuminated *leaves,* and large heads of purplish white *flowers*: allied to *A. Porrum,* the *Leek,* in habit, but differing in its perennial and clustered young bulbs. The specific name, αμπελος, a *vine,* and πρασον, a *leek,* means *onion of the vineyard. Porrum,* says Théis, is from *pori,* to *eat,* in Celtic, whence comes our word *Porridge.*

2. A. *arenárium*, Linn. (*Sand-Garlic*); umbels bearing bulbs compact spherical, leaves linear with cylindrical sheaths, 3 alternate

+ The roots of this and its two followers are good for bruises, and Gerarde says "they will take away in one night, or two "at most, any bruse, blacke or blewe spots, gotten by falls, or "woman's wilfulnesse in stumbling on their hasty "husbande's fists, or such like."

stamens 3-cleft, leaves of the spatha short obtuse. *Engl. Bot. t.* 1358. *Hook. Scot. i. p.* 100. *Engl. Fl. v. ii. p.* 134.

Mountainous woods and fields, in a sandy soil, principally in the north of England. Perthshire and Angus in Scotland. Portmarnock sands, Ireland, *Mr. J. T. Mackay. Fl.* July. ♃.—*Stem* 2—3 feet high, leafy below, rounded, glabrous. Heads dense with purple *flowers*, rather small. *Spatha* often of 3, very short, ovate, obtuse segments.

3. A. *carinátum*, Linn. (*Mountain Garlic*); umbels bearing bulbs lax, leaves linear keeled, stamens all simple, leaves of the spatha very long unequal. *Engl. Bot. t.* 1658. *Hook. Scot. i. p.* 101. *Engl. Fl. v. ii. p.* 135.

Sandy ground on the south-east coast of England, and mountainous situations in the north. Banks of the Isla, Scotland. Near Dublin, *Dr. Scott. Fl.* July. ♃.—Three feet high. *Stems* rounded, glabrous, leafy below. *Flowers* upon long wavy peduncles, pale brownish-white. Smith considers it to differ from the following only in its more compressed leaves.

** *Stem-leaves rounded.*

H. 4. A. *oleráceum*, Linn. (*streaked Field Garlic*); umbel bearing bulbs lax, leaves grooved above, stamens all simple, leaves of the spatha with long points. *Engl. Bot. t.* 488. *Hook. Scot. i. p.* 101. *Engl. Fl. v. ii. p.* 136.

Borders of fields in Essex, about Bristol, in Norfolk, Westmoreland and Yorkshire. St. David's, Scotland. *Fl.* July. ♃.

H. 5. A. *vineále*, Linn. (*Crow Garlic*); umbel bearing numerous bulbs, leaves fistulose, stamens deeply 3-cleft. *Engl. Bot. t.* 1974. *Hook. Scot. i. p.* 101. *Engl. Fl. v. ii. p.* 137.

Corn-fields, waste places, &c. not unfrequent throughout England and the south of Scotland: and near Dublin, Ireland. *Fl.* June. ♃.—*Stem* 1½ to 2 feet high. *Bulbs* numerous. *Spatha* of 2 rather small, deciduous *leaves*. *Flowers* on longish peduncles, which are thickened upwards, few, erect, reddish, green on the keels, shorter than the *stamens*, whose *filaments* as well as the *anthers* are protruded.

*** *Leaves all radical.*

H. 6. A. *ursínum*, Linn. (*broad-leaved Garlic or Ramsons*); umbel nearly plane, leaves ovato-lanceolate on footstalks, scape triangular. *Engl. Bot. t.* 122. *Hook. Scot. i. p.* 101. *Engl. Fl. v. ii. p.* 137.

Moist woods and hedge-banks, frequent. *Fl.* June.—*Flowers* white. *Umbels* without bulbs, level-topped. *Spatha* of 2, ovato-lanceolate *leaves*.

7. A. *Schœnoprásum*, Linn. (*Chive Garlic*); leaves rounded subulato-filiform fistulose, scape rounded as long as the leaves. *Engl. Bot. t.* 2441. *Hook. Scot. i. p.* 101. *Engl. Fl. v. ii. p.* 138.

Meadows and pastures, rare. Scotland, in Berwickshire and Argyleshire, *Lightfoot.* Westmoreland. Above Kynance Cove, Cornwall. *Rev. J. S. Tozer. Fl.* June. ♃.—One foot high. Heads of *flowers* compact, purplish. *Stam.* simple. *Spatha* of 2 short ovate leaves. *Umbel* without bulbs. Specific name from σχοινος, a *rush*, and πρασον, a *leek: rush-leaved onion.*

9. Gágea. *Salisb.* Gagea.

Perianth coloured, of 6 persistent pieces, connivent below, spreading above. *Filaments* not dilated at the base. *Capsule* triangular. (*Flowers corymbose or umbellate, yellow, with foliaceous bracteas.*)—*Nat. Ord.* Liliaceæ. Trib. II. Asphodeleæ. *De Cand.*—Named in honour of the late Sir Thos. Gage, Baronet, an excellent British botanist.

H. 1. G. *lútea*, Ker, (*yellow Gagea*); radical leaves 1—2 linear-lanceolate longer than the angular scape, umbel simple, bracteas linear-lanceolate longer than the umbel, leaves of the perianth obtuse. *Lindl. Syn. t.* 268.—*Ornithogalum luteum, Linn.*—*Engl. Bot. t.* 21. *Hook. Scot. i. p.* 102. *Engl. Fl. v. ii. p.* 142.

Woods and pastures, in several parts of England and Lowlands of Scotland: also near the old Castle of Kilcoy, Ross-shire, in great abundance. *Mr. Urquhart. Fl.* March, Apr. ♃.—A small plant with yellow or yellow-green *flowers*, very different in habit from *Ornithogalum.*

10. Ornithógalum. *Linn.* Star of Bethlehem.

Perianth inferior, petaloid, of 6 persistent pieces. *Stam.* alternately larger or dilated at the base. *Capsules* with 3 angles and 3 furrows. (*Flowers racemose. Bracteas membranaceous.*)—*Nat. Ord.* Liliaceæ. Trib. II. Asphodeleæ. *De Cand.*—Name, ορνις, ορνιθος, *a bird*, and γαλα, *milk*. Linnæus says that the roots of O. *umbellatum* are the "*Dove's Dung*," which was sold so dear at the siege of Samaria, as mentioned in 2d book of Kings, ch. vi. v. 25. They are still much used as food in the Levant. (*See Engl. Bot. p.* 130).

1. O. *pyrenáicum*, Linn. (*spiked Star of Bethlehem*); raceme elongated, filaments all dilated, peduncles equal spreading erect in fruit. *Engl. Bot. t.* 499. *Engl. Fl. v. ii. p.* 143.

Rare. Pastures in Somersetshire, Sussex and Bedfordshire. *Fl.* June, July. ♃.—*Bulb* ovate. *Leaves* long, linear, acuminate, channelled. *Scape* 1½ to 2 f. long. *Raceme* elongated. *Flowers* much smaller than in the two following species, greenish-white.

2. O. *umbellátum*, Linn. (*common Star of Bethlehem*); racemes corymbose, peduncles longer than the bracteas, filaments subulate. *Engl. Bot. t.* 130. *Hook. Scot. i. p.* 102. *Engl. Fl. v. ii. p.* 143.

Meadows and pastures in various parts of England: scarcely wild. Near Glasgow. *Fl.* Apr. May. ♃.—Eight to ten inches high. *Leaves* linear, acuminate, grooved. *Flowers* large, few, 6—9, lower pedicels very long, so that their flowers reach to the same height with the upper ones, thus forming a *corymb*, each having a membranous lanceolate *bractea.* Pieces of the *perianth* green, with a white margin and white within.

H. 3. O. *nútans*, Linn. (*drooping Star of Bethlehem*); flowers pendulous unilateral, filaments broad cloven alternately longer and with deeper lobes. *Engl. Bot. t.* 1997. *Engl. Fl. v. ii. p.* 144.

Fields and orchards, apparently naturalized in England: in Bedfordshire, Suffolk, Derby and Nottingham. *Fl.* Apr. May. ♃.—*Flowers* in a true, but lax, *raceme*, larger than the last, and having the filaments of their stamens of a very peculiar structure.

11. Scílla. *Linn.* Squill.

Perianth inferior, of 6 leaves, petaloid, spreading and deciduous. *Filaments* filiform, glabrous, inserted at the base of the perianth. (*Flowers racemed.*)—*Nat. Ord.* Liliaceæ. Trib. II. Asphodeleæ. *De Cand.*—Name, from σκυλλω, *to injure:* in Arabic also, *âsgyl.* The root of *S. maritima* is said to be highly poisonous and a valuable medicine.

H. 1. S. *vérna*, Huds. (*vernal Squill*); bulb coated, raceme in an hemispherical corymb few-flowered, bracteas lanceolate obtuse, leaves linear channelled. *Engl. Bot. t.* 23. *Hook. Scot. i. p.* 103. *Engl. Fl. v. ii. p.* 145.

Common on the coasts in the west and northern parts of Great Britain, in Orkney and Shetland, frequent. In Ireland. *Fl.* April. ♃.—*Plant* 4—5 inches high. *Leaves* few, nearly as long as the scape. *Flowers* fragrant, deep blue. *Filaments* subulate; *bracteas* membranaceous. —Mr. W. H. F. Talbot finds this species in the Pyrenées along with *S. Lilio-Hyacinthus*, which latter he distinguishes by the scaly root, racemed flowers, bracteas much longer than the pedicels and broader leaves.

2. S. *bifólia*, Linn. (*two-leaved Squill*); bulb coated, raceme lax subcorymbose, bracteas obsolete, leaves lanceolate mostly 2. *Engl. Bot. t.* 24. *Engl. Fl. v. ii. p.* 146.

A very dubious native. It exists in *Buddle's Herbarium*, and was received from the West of England by *Mr. Sims* of Norwich. *Fl.* March, April. ♃.—*Flowers* pale blue.

H. 3. S. *autumnális*, Linn. (*autumnal Squill*); bulb coated, raceme scarcely corymbose, bracteas none, pedicels and stamens about as long as the perianth, leaves linear several. *Engl. Bot. t.* 78. *Engl. Fl. v. ii. p.* 146.

Dry pastures and rocks in Cornwall, and near Bristol. Formerly found about London. *Fl.* Sept. ♃.—*Flowers* pinkish-purple.

12. Hyacínthus. *Linn.* Hyacinth.

Perianth inferior, of 1 piece, petaloid, 6-cleft or 6-partite, tubular, reflexed at the extremity. *Stamens* inserted upon the segments, included.—*Nat. Ord.* Liliaceæ. Trib. II. Asphodeleæ. *De Cand.*—Named from the youth *Hyacinthus*, who, being killed by

Apollo, was changed by him into a plant, whose foliage bore the initials of his name. Our only British species, having no mark or figure, was hence called *non-scriptus.*

H. 1. H. *non-scríptus*, Linn. (*wild Hyacinth or Hare-bell*); flowers in the raceme drooping, perianth sexpartite the extremities reflexed, bracteas in pairs. *Hook. Scot. i. p.* 102.—*Scilla nutans, Engl. Bot. t.* 377. *Engl. Fl. v. ii. p.* 147.

Woods, copses, and hedge-rows; varying with white and more rarely rose-coloured *flowers*. *Fl.* May. ♃.—*Leaves* long, linear, channelled, acuminate. *Scape* 1 foot high, with 2 bracteas at the base of each short pedicel. The habit of this plant is surely more that of the *H. orientalis* than of any true *Scilla.*

13. Múscari. *Tourn.* Grape-Hyacinth.

Perianth inferior, of 1 piece, petaloid, ovate, inflated, 6-toothed. *Capsule* trigonous, with prominent angles; *cells* 2-seeded. *Duby.* —*Nat. Ord.* Liliaceæ. Trib. II. Asphodeleæ.—Named from *μοσχος, musk,* a smell yielded by one species.

1. M. *racemósum*, Mill. (*Starch Grape-Hyacinth*); flowers crowded ovate upper ones sessile, leaves linear flaccid keeled longer than the scape.—*Hyacinthus racemosus, Linn.*—*Engl. Bot. t.* 1931. *Engl. Fl. v. ii. p.* 149.

Grassy fields, and among ruins, scarcely indigenous. *Fl.* May. ♃.—*Flowers* deep blue, smelling like wet starch.

14. Anthéricum. *Linn.* Spider-wort.

Perianth inferior, petaloid, of 6 equal, spreading, deciduous elliptical pieces. *Stam.* filiform, bearded. *Capsule* roundish, 3-celled. *Seeds* angular.—*Nat. Ord.* Liliaceæ. Trib. II. Asphodeleæ. —Name from *ανθερικος*, a name given by the Greeks to the stem of the *Asphodel.*

1. A. *serótinum*, Linn. (*Mountain Spider-wort*); leaves semicylindrical, cauline ones dilated at their base, flowers mostly solitary. *Engl. Bot. t.* 793. *Engl. Fl. v. ii. p.* 150.

Rare, on the Welsh mountains. On Snowdon, Crib y Ddescil, near Llanberris; and Cwm Idwal, Caaernarvonshire, (*Engl. Fl.*) "On Snowdon, as well as on rocks by Twll dû, and near the summit of Glyder Faur; all neighbouring, but distinct, situations." *Mr. W. Wilson.* *Fl.* June. ♃.—Four to 6 inches high. "*Flower-stalk* invested with its own sheath and separated by an elongation of the *root* from the *leaves,* of which the most distant one encloses within its fleshy base the rudiment of the plant of the following season. The plant is increased by offsets or creeping shoots with a bulb at the extremity, the point of the bulb directed towards the parent root. The lateral ribs at the back of the leaf are one on each side of the keel, not 'of the leaf.' Two-flowered specimens are very unfrequent.—*W. Wilson.*

15. Aspáragus. *Linn.* Asparagus.

Perianth inferior, 6-partite, deciduous. *Stigmas* 3. *Berry* globose, 3-celled. *Seeds* few. *Embryo* excentric.—*Nat. Ord.* Liliaceæ. Trib. II. Asphodeleæ. *De Cand.*—Name, ασπαϱαγος in Greek, from σπαϱασσω, *to tear:* and that, according to Théis, from *spen*, a *spine*, in Celtic, which is the root of many words in Latin, French, German, and English. Many species of this genus are armed with spines.

1. A. *officinális*, Linn. (*common Asparagus*); unarmed, stem herbaceous erect rounded very much branched, leaves setaceous fasciculate flexible, peduncles jointed in the middle. *Engl. Bot. t.* 339. *Hook. Scot. i. p.* 103. *Engl. Fl. v. ii. p.* 152.

In several parts of the South, and South-west coasts of England. On an island, thence called "*Asparagus Island*," Kynance Cove, Cornwall; *Rev. J. S. Tozer.* Links near Gosford, Scotland. *Fl.* Aug. ♃.—*Root* creeping, throwing up numerous scaly erect *stems*, which when cultivated form the *Asparagus* of our tables: rarely, in a wild state, exceeding a foot in height. *Flowers* drooping, greenish-white. *Berries* bright red.

16. Narthécium. *Huds. Bog-Asphodel.*

Perianth inferior, petaloid, of 6 linear-lanceolate, spreading pieces. *Stam.* woolly. *Germen* pyramidal. *Caps.* 3-celled, 3-valved. *Seeds* with an appendage at each extremity.—*Nat. Ord.* Junceæ. *De Cand.*—Name from ναϱθηξ, a *rod*, probably from the elongated straight raceme of flowers. It is remarkable that this word is an anagram of *Anthericum*, a genus with which Linnæus united it. It is the same as the *Abama* of De Candolle.

1. N. *ossifrágum*, Huds. (*Lancashire-Bog-Asphodel*); leaves linear uniform, pedicels with bracteas above the middle, stamens much shorter than the perianth. *Engl. Bot. t.* 535. *Hook. Scot. i. p.* 103. *Engl. Fl. v. ii. p.* 151.

Wet places in moors, and on mountains, frequent. *Fl.* July, Aug. ♃—Six to 8 inches high, decumbent at the base. *Roots* creeping. *Leaves* all radical, uniform, equitant, striated, about ½ as long as the *scape*, which has many scales or bracteas. *Stamens* considerably shorter than the *perianth*, in which it differs, as well as in the shorter wool of the filaments, its broader leaves and situation of the bractea upon the pedicels, from *N. Americanum* of Ker. *Seeds* with a very long *arillus* forming an appendage to each extremity, attached to a longitudinal receptacle on each valve: the *receptacles* form the dissepiments.

17. Fritillária. *Linn.* Fritillary.

Perianth campanulate, inferior, of 6 pieces, with a nectariferous cavity at the base of each. *Stigmas* 3. *Capsule* 3-celled, 3-valved, oblong. *Seeds* flat.—*Nat. Ord.* Liliaceæ. Trib. I. Tulipaceæ. *De Cand.*—Name derived from *fritillus*, a *Dice-board.*

1. F. *Meleágris*, Linn. (*common Fritillary*); stem single-flowered, leaves alternate linear-lanceolate, points of the perianth inflexed, nectary linear. *Engl. Bot. t.* 622. *Engl. Fl. v. ii. p.* 139.

Meadows and pastures, principally in the eastern and southern parts of England. *Fl.* April. ♃.—Varies with white *flowers.* Its specific name is derived from the *Numidia Meleagris,* or *Pintado,* whose plumage is checquered in a somewhat similar manner.

18. Tulípa. *Linn.* Tulip.

Perianth campanulate, inferior, of 6 pieces. *Nectaries* 0. *Stigma* sessile, 3-lobed. *Capsule* trigonous. *Seeds* flat.—*Nat. Ord.* Liliaceæ. Trib. I. Tulipaceæ. *De Cand.*—Named from *toliban,* the Persian name for a *Turban,* whose gay colours are similar to those of the Tulip. *Théis.*

H. 1. T. *sylvéstris,* Linn. (*wild Tulip*) ; stem 1-flowered somewhat drooping, leaves of the perianth ovato-acuminate bearded at the extremity, stamens hairy at the base, stigma obtuse. *Engl. Bot. t.* 63. *Hook. Scot. i. p.* 102. *Engl. Fl. v. ii. p.* 140.

Chalk-pits in England; Norfolk, Suffolk, Hertfordshire, and Middlesex. In Scotland, near Hamilton and Brechin, and in an old quarry at Bennie Craig, Firth of Forth, *Mr. J. T. Mackay. Fl.* April. ♃.—*Flowers* yellow, fragrant. *Anthers* and *pollen* yellow. *Leaves* linear-lanceolate. The *wild Tulip* increases by throwing out a long stout fibre from its *root,* at the extremity of which a *bulb* appears. Thus is a new individual planted at a considerable distance from the parent plant.

19. Ácorus. *Linn.* Sweet Flag.

Flowers arranged upon a *spadix. Spatha* 0. *Perianth* of 6 pieces or scales, inferior. *Stigma* sessile. *Capsule* indehiscent, many-seeded.—*Nat. Ord.* Aroideæ. *Juss.*—Name from α, *without,* and κοριον, or κορη, *the pupil of the eye,* diseases of which it was supposed to remove.

H. 1. A. *Cálamus,* Linn. (*common Sweet Flag*) ; ancipitate scape rising much above the spadix. *Engl. Bot. t.* 356. *Engl. Fl. v. ii. p.* 157.

Watery places on the banks of rivers, in the middle and south-eastern counties of England; abundant in Norfolk and Suffolk. Rare in Scotland. Ayrshire, *Mr. James Smith.* Loch Winnoch, Renfrewshire, *Mr. Paterson.* Castle Semple Loch, *Dr. Logan. Fl.* June. ♃.—*Root* aromatic. *Scape* similar to the *leaves,* ensiformi-ancipitate. The agreeable scent of this plant has recommended it for garlands, and for strewing on the floor of the cathedral at Norwich on festival days. The roots are said to be employed by brewers, instead of liquorice, to give a flavour to their porter.

**** *Perianth single, inferior, glumaceous.*—Gen. 20, 21.

20. Júncus. *Linn.* Rush.

Perianth inferior, of 6 leaves, glumaceous. *Caps.* 3-celled, 3-valved, valves with the seed-bearing *dissepiments* in their middle. (*Leaves rigid, mostly rounded, rarely plane, glabrous.*)—*Nat. Ord.* Junceæ. *De Cand.*—Name from *jungo, to join,* the leaves and stems of this genus having been employed as cordage.

* *Leaves none. Barren scapes resembling leaves. Panicle lateral. Flowers scattered.*

H. 1. J. *glaúcus*, Sibth. (*hard Rush*); scape deeply striated rigid, panicle much branched, leaves of the perianth lanceolate subulate nearly equal, longer than the elliptical capsule. *Engl. Bot. t.* 665. *Hook. Scot. i. p.* 105. *Engl. Fl. v. ii. p.* 160.

Wet pastures and by road-sides. *Fl.* July. ♃.—*Root* creeping. *Scapes* 1—2 f. high, glaucous, rigid, at the base covered with deep purple-brown, membranaceous, shining *sheaths*. *Panicle* lax, erect. *Flowers* slender, pale brown, with a broad green line down the middle of each leaflet of the perianth. *Bracteas* also small and acuminate. *Stam.* 6, in my specimens.

H. 2. J. *effúsus*, Linn. (*soft Rush*); scapes very faintly striated soft, panicle loose very much branched, spreading leaflets of the perianth lanceolate nearly acuminate rather longer than the obovate obtuse capsule. *Engl. Bot. t.* 836. *Hook. Scot. i. p.* 105. *Engl. Fl. v. ii. p.* 162.—*J. communis β. De la Harpe in Mém. de la Soc. d'Hist. Nat. v. iii. p.* 115.

Wet marshy grounds, common. *Fl.* July. ♃.—Distinguishable from the last by its soft, pliable, almost smooth (scarcely striated) *scapes*, and spreading, denser and shorter *panicles*, in which particulars it approaches the following species, with which, indeed, De la Harpe unites it. *Stam.* 3 or 6.—Excellent, as is the following, for plaiting into mats, chair-bottoms, &c. Wicks of candles are made of the pith.

H. 3. J. *conglomerátus*, Linn.) *common Rush*); scapes very faintly striated (soft), panicle much branched very dense globose, leaflets of the perianth lanceolate acute nearly equal about as long as the broadly ovate very obtuse capsule, stamens 3. *Engl. Bot. t.* 1835. *Hook. Scot. i. p.* 105. *Engl. Fl. v. ii. p.* 160.—*J. communis α. De la Harpe in Mém. de la Soc. d'Hist. Nat. v. iii. p.* 115.

Wet and marshy ground, frequent. *Fl.* July. ♃.—*Panicle* very dense. *Scape* resembling the last, and employed for the same purposes.

H 4. J. *bálticus*, Willd. (*Baltic Rush*); scapes very obscurely striated, panicle erect branched, leaflets of the perianth nearly equal very acute equal in length with the elliptical capsule, stamens 6.—*Hook. in Engl. Bot. Suppl. ined.*—*J. arcticus, Hook. in Fl. Lond. t.* 151. *Fl. Scot. i. p.* 104. (*excl. syn.*) *Engl. Fl. v. ii. p.* 163. (*excl. syn. Willd. and Wahl.*)

Sandy sea-shores in Scotland; near Dundee, *Mr. Thomas Drummond.* Farr and Cape Wrath, Sutherland; *Dr. Graham.* Aberdeenshire, *Dr. Alexander Murray.* Stotfield, 6 m. from Elgin, and between Findhorn and Spey; on the banks of the Losie, 7 m. from the sea, but where the sea has formerly reached; and at St. Andrews, Llanbryde, remote from the sea, *Rev. G. Gordon.* *Fl.* July. ♃.—This comes so near to the true *J. arcticus*, that I had myself considered it to be the same, or only a large variety of it. It is, however, assuredly, the *J. balticus* of Wildenow, and differs from *J. arcticus* in its much taller and more rigid *scapes*, larger, and decidedly branched *panicle*, and rounded, not trigonous, *capsules*. Both have exceedingly creeping *roots*, more so than any other species I am acquainted with. *Flowers* dark brown, with a pale line down the centre of each segment.

H. 5. J. *filifórmis*, Linn. *(thread Rush)*; scapes filiform, panicle simple of few flowers from near the middle of the scape, leaflets of the perianth lanceolate acuminate nearly equal larger than the obovate capsule, stamens 6. *Engl. Bot. t.* 1175. *Hook. Scot. i. p.* 105. *Engl. Fl. v. ii. p.* 162.

Stony margins of lakes in Cumberland, Westmoreland, and Lancashire. Ben-Lawers, *Mr. Dickson*; and several parts of Scotland, *Mr. G. Don*; but I have never seen Scottish specimens. *Fl.* July, Aug. ♃. *Root* creeping. *Plant* remarkable for its slender *scapes*, greatly extended beyond the *panicle*, for its pale greenish *flowers* and short *capsules*.

** *Leaves none. Barren scapes resembling leaves. Panicle terminal. Flowers aggregated.*

H. 6. J. *marítimus*, Sm. (*lesser sharp Sea Rush*); barren scapes and outer bracteas pungent, panicle very compound, clusters 4—8 flowered, leaflets of the perianth equal lanceolate acute as long as the elliptical mucronated capsule. *Engl. Bot. t.* 1725. *Engl. Fl. v. ii. p.* 159.—*J. acutus β. Linn.*

Salt marshes in various parts of England, but not frequent. St. Andrews, Scotland, *Mr. J. Mackay*. Coast of Ayrshire, *Mr. J. Smith*. Kingstown and other places in Ireland, *Mr. J. T. Mackay*. *Fl.* Aug. ♃.—In this and the following species, the outer *bractea*, or portion that rises above the panicle, is broad and membranous at the base, and less like a continuation of the scape than in the preceding species.

H. 7. J. *acútus*, Linn. (*great sharp Sea Rush*); barren scapes and outer bracteas pungent, panicle very compound mostly compact, clusters 2—4 flowered, leaflets of the perianth equal, interior ones with a broad membranous margin at the apex shorter than the broadly ovate suddenly acuminated capsule. *Engl. Bot. t.* 1614. *Engl. Fl. v. ii. p.* 158.

Sandy sea-shores, principally on the west of England and Wales. Norfolk. Wicklow, and Arklow, Ireland, *Mr. Hodgins*. *Fl.* July. ♃. —Larger and stouter than the last, especially in the *capsules*, which are of considerable size, much protruded, rich brown and glossy.

*** *Stems leafy. Leaves rounded or subcompressed, and distinctly jointed internally. Panicle terminal. Flowers aggregated or fascicled.*

H. 8. J. *acútiflorus*, Ehrh. (*sharp-flowered jointed Rush*); leaves subcompressed, panicle very compound pyramidal, clusters 5—6 flowered, leaflets of the perianth unequal lanceolate very acute nearly as long as the narrow-ovate subacuminate capsule. *Engl. Bot. p.* 2143. *Hook. Scot. v. i. p.* 109. *Engl. Fl. v. ii. p.* 174. —*J. articulatus*, *Engl. Bot. t.* 238.

Bogs, very common. *Fl.* June—Aug. ♃.—One to two feet high, erect

Leaves 3—4 on a stem, distinctly nodoso-articulate when dry. *Panicle* diffuse, in fruit spreading. *Flowers* several together, greenish brown. *General bracteas* short, membranaceous, scarcely leafy. *Capsules* pale-coloured.

H. 9. J. *lampocárpus*, Ehrh. (*shining-fruited jointed Rush*); stem ascending and as well as the leaves compressed, panicle compound spreading, clusters 4—6 or 8-flowered, leaflets of the perianth equal rather obtuse shorter than the acute triquetrous oblongo-lanceolate capsule. *Engl. Bot. t.* 2143. *Hook. Scot. i. p.* 109. *Engl. Fl. v. ii. p.* 175.

β. panicles less branched, clusters of more numerous flowers. *J. polycephalus, Don, MSS.—Hook. Scot. i. p.* 110. Scarcely of *Pursh?*

Boggy grounds and watery places, frequent. *Fl.* July, Aug. ♃.—Very similar to the last in many respects; but with larger *flowers*, and deep brown shining *capsules*. The *var.* β. has more numerous *flowers* in each cluster or head, sharper leaflets to the *perianth*, pale *capsules*, and seems almost to unite *J. acutiflorus* with *J. lampocarpus*.

H. 10. J. *obtusiflórus*, Ehrh. (*blunt-flowered jointed Rush*); stem and leaves erect rounded, panicle very compound spreading and divaricated, clusters 3—6 flowered, leaflets of the perianth equal rather obtuse about equal in length with the oval trigonous capsule. *Engl. Bot. t.* 2144. *Hook. Scot. i. p.* 109. *Engl. Fl. v. ii. p.* 176.

Wet pastures and marshes, not unfrequent. *Fl.* Aug. ♃.—Distinct as this species assuredly is, it has very frequently been confounded with the preceding ones of this division.

H. 11. J. *uliginósus*, Sibth. (*lesser Bog jointed Rush*); stem erect and often swollen at the base or decumbent and rooting, leaves bristle-shaped, panicle nearly simple irregular, clusters few or many-flowered, leaflets of the perianth equal oblong subacute nearly as long as the elliptical capsule. *Engl. Bot. t.* 801. *Hook. Scot. i. p.* 108. *Engl. Fl. v. ii. p.* 169.—*J. bulbosus, Linn.*—*J. subverticillatus, Wulf.—Host, Gram. Austr. v. iii. t.* 88. *Hook. Scot. i. p.* 109. *Engl. Fl. v. ii. p.* 170.

Boggy and swampy places, and often partly floating in shallow water. *Fl.* Aug. ♃.—This is indeed an extremely variable plant, depending much for its appearance on soil and situation. In rather dry places it often rises erect, 3—4 inches high, having a bulbous or swollen base, and is then the original *bulbosus* of *Linn.* At other times the *stems* are spreading or procumbent, when it becomes the *J. subverticillatus* of Wulfen. Again these procumbent stems often take root at intervals, and are proliferous: at other times, when growing in water, the stems float upon the surface and spread their long flaccid branches in all directions. The ramifications and panicles are exceedingly irregular; the latter few-flowered. It is often extremely difficult to distinguish this from small varieties of *J. lampocarpus*.

**** *Stems leafy. Leaves plane or grooved above; not distinctly jointed.*

12. J. *castáneus*, Sm. (*clustered alpine Rush*); stem rounded,

leaves hollow grooved above rounded at the back, heads of flowers generally single sessile or peduncled shorter than the bractea, capsules ovate bluntly trigonal nearly twice as long as the perianth. *Engl. Bot. t.* 90. *Hook. Scot. i. p.* 106. *Engl. Fl. v. ii. p.* 173.

Rare, on the elevated mountains of Breadalbane. On Ben y Challum, *Rev. Dr. Stuart.* Fion Glen, behind Craigalleach, and on Ben Lawers, Mael-Greadha, *Mr. W. Wilson.*—In the county of Durham, *Rev. Mr. Harriman,* (*Engl. Fl.*) *Fl.* July, ♃.—" *Root* slightly creeping, with short runners or lateral shoots. *Stem* hollow. *Leaves* having the channelled side very thin and membranaceous; within are found distant transverse partitions. Upper part of the leaf rounded and compressed. Leaves of the *perianth* elliptic-lanceolate, acute and 3-ribbed. *Style* breaking off at a joint. *Capsule* shining, and as well as the perianth and inner bractea, of a deep chocolate colour." *W. Wilson.*

H: 13. J. *trífidus,* Linn. (*three-leaved Rush*); sheaths fringed those at the base of the stem leafless, bracteas resembling the setaceous solitary stem-leaf, heads of about 3 terminal flowers. *Engl. Bot. t.* 1482. *Hook. Scot. i. p.* 107. *Engl. Fl. v. ii. p.* 163.

Rocky places, on the Highland mountains of Scotland. *Fl.* July, Aug. ♃.—Very unlike any other British *Juncus. Root* creeping. Lower *sheaths* with at most a short awn, scarcely to be termed a leaf. A solitary *leaf* on the stem, generally near the summit, 2—3 inches long, linear-setaceous. *Bracteas* 2 under each head of 1—3 flowers. " *Capsule* not at all angular, but rounded elliptical with a furrowed beak." *W. Wilson.*

H. 14. J. *compréssus,* Jacq. (*round-fruited Rush*); stem erect compressed, leaves linear-setaceous grooved, panicle terminal compound subcymose generally shorter than the bracteas, capsules roundish ovate longer than the obtuse incurved leaflets of the perianth. *Bich. in Tr. of Linn. Soc. v. xii. p.* 307. *Engl. Fl. v. ii. p.* 165.

β. panicle nearly simple few-flowered longer than the bracteæ. *Hook. in Fl. Scot. i. p.* 107.—*J. bothnicus, Wahl.*—*J. cænosus, Bich. in Linn. Trans. v. xii. p.* 309. *Engl. Fl. v. ii. p.* 166.

Wet marshy places, common. β. In salt marshes. *Fl.* Aug. ♃.—Having now seen various specimens both of the *J. cænosus* of Mr. Bicheno and *J. bothnicus* of Wahlenberg, I feel confirmed in the opinion expressed in *Fl. Scotica,* that they are but varieties of *J. compressus.* De la Harpe, who has retained the *J. bothnicus* as a species in his Monograph on the *Junci,* yet assures us that it is impossible to say to which of the two belong certain specimens.

15. J. *ténuis,* Willd. (*slender spreading Rush*); stem above shortly dichotomous panicled, leaves linear-setaceous grooved, flowers solitary approximate mostly sessile, capsules nearly spherical shorter than the very acuminated leaflets of the perianth. *Pursh, Fl. Am. v. i. p.* 228. *Hook. Scot. i. p.* 108.—*J. bicornis, Mich. (according to De la Harpe).*—*J. gracilis, Engl. Bot. t.* 2174.—*J. Gesneri, Engl. Fl. v. ii. p.* 167.

Moist mountains of Clova, *D. Don. Fl.* July. ♃.—This rare British plant seems abundant in America, and I possess specimens likewise from various parts of the continent of Europe. It is allied to *J. bufonius*, yet really distinct. *Radical leaves* several; *stems* bare of leaves up to the division near the top, where is one leaf immediately beneath the foliaceous *bracteas*. In the axils of the forks are 2 or 3 large, nearly sessile *flowers*, and 2 or 3 unilateral ones on the branches. The *capsule* is very different from that of the following species. My Scottish specimens entirely agree with the true American *J. tenuis*, which I have from Dr. Boott and various American Botanists. I therefore retain the name. Smith has named it *J. Gesneri*, considering it to be the plant figured in "*Gesn. Fasc.* 12, *t. v. f.* 13;" but that, which I have not the opportunity of referring to, De la Harpe says is manifestly *J. bufonius*.

H. 16. J. *bufónius*, Linn. (*Toad Rush*); stem dichotomous above panicled, leaves filiform setaceous grooved, flowers solitary unilateral mostly sessile, capsules elliptical ovate, much shorter than the very acuminated leaflets of the perianth. *Engl. Bot. t.* 802. *Hook. Scot. i. p.* 108. *Engl. Fl. v. ii. p.* 168.

Frequent in moist, or watery places, especially such as have been overflowed in the winter. *Fl.* Aug. ⊙—From 4 to 6 inches high. *Leaves* few, slender, only one on the stem, generally near the middle. The divisions, or ramifications of the *stem*, as they are called, more properly I think, belong to the panicle, at the base of which are foliaceous *bracteas*. Whole plant very pale-coloured. *Flowers* green, with white membranous margins to the leaflets of the perianth.

***** *Leaves all radical. Flowers terminal.*

17. J. *squarrósus*, Linn. (*Heath Rush*); leaves setaceous (rigid) grooved, panicle terminal elongated compound, capsules elliptical ovate. *Engl. Bot. t.* 933. *Hook. Scot. i. p.* 105. *Engl. Fl. v. ii. p.* 164.

Moory and heathy ground, abundant. *Fl.* June, July. ♃.—Whole *plant* exceedingly rigid, 6 inches to a foot high. *Leaves* subsecund, about half as long as the scape. *Bracteas* lanceolate, membranaceous. *Leaflets* of the *perianth* ovato-lanceolate, glossy brown with a pale line down the middle, scariose at the edges. *Capsules*, as in almost all this Genus, tipped with a short mucro, the remains of the style, palish brown.

18. J. *capitátus*, Willd. (*capitate Rush*); leaves filiform (soft) plane or grooved above, heads of flowers sessile terminal shorter than the bractea, leaflets of the perianth acuminato-aristate. *Hook. Scot. i. p.* 106. (*excl. Syn. of Don's J. supinus, Fasc. n.* 85. *according to Smith*). *Engl. Fl. v. ii. p.* 171.—*J. supinus, Bich. in Linn. Trans. v. xii. p.* 317.—*J. ericetorum, De Cand. and Dub. Bot. Gall. p.* 475.

Found by Mr. Hudson in the isle of Jersey. (*Engl. Fl.*) Scotland, *G. Don*, according to a specimen given me by Mr. G. Don. *Fl.* May, July. ⊙.—*Plant* from 2 to 4 inches high, flaccid. *Leaves* entirely radical, about half the length of the *scape*, erect. *Heads* rather large, in proportion to the size of the plant, of from 3 to 6 sessile *flowers*, occasionally proliferous. This species is well distinguished by the setaceous inclined *bractea,* with its sheathing membranaceous base, (which is longer than the heads of flowers), and by the acuminato-aristate *perianth.* It is well represented in Sturm's *Deutschland Flora.*

19. J. *biglúmis,* Linn. (*two-flowered Rush*); leaves linear-subulate compressed (not channelled) gradually dilated into the sheathing base, flowers 2, one of them pedicelled mostly shorter than the foliaceous involucre, capsule turbinate retuse rather longer than the obtuse leaflets of the perianth. *Engl. Bot. t.* 898. *Hook. Scot. i. p.* 106. *Engl. Fl. v. ii. p.* 172.

Boggy places on the Highland mountains: not unfrequent on the Breadalbane range, but rare in other parts of Scotland. *Fl.* July, Aug. ♃.—2 to 4 inches high; growing, not in tufts, but scattered, and a much rarer species than the following, small specimens of which have often been mistaken for it. "*Leaves* with distant transverse partitions within, but not longitudinally divided." *Mr. W. Wilson.*

20. J. *triglúmis,* Linn. (*three-flowered Rush*); leaves linear-subulate channelled bitubular their sheaths auricled above, flowers mostly 3, generally as long as the membranaceous bractea, capsule elliptical acute longer than the rather obtuse leaflets of the perianth. *Engl. Bot. t.* 899. *Hook. Scot. i. p.* 106. *Engl. Fl. v. ii. p.* 106.

Boggy places among the mountains of the north of England, Wales, and especially in the Highlands of Scotland. *Fl.* July, Aug. ♃.—Mr. W. Wilson has well studied, in living plants, the character of this and the preceding species of Rush. "*Stems,*" he says, of this plant, "several from the same root, perfectly rounded, not channelled on one side, as in *J. biglumis,* naked above, and generally with 2, and sometimes 3 leaves near the base. *Leaves* with dilated *sheaths,* which are auricled at the top, setaceous, channelled, *bitubular,* with transverse partitions; *radical leaves* also setaceous, more slender and longer than in *J. biglumis.* Sometimes 4 *flowers* are found together, the additional ones placed lower down and separated from the rest. Outer *bractea* sometimes as large as in *J. biglumis;* each flower has one bractea at its base. *Cal. leaves* more membranous than in the last, narrower and more acute. *Capsule* longer than the calyx, with a tapering, rather acute extremity, and with indistinctly furrowed sides; colour almost black." *W. Wilson.*

21. LÚZULA. *De Cand.* Wood-rush.

Perianth inferior, of 6 leaves, glumaceous. *Caps.* 1-celled, 3-valved: *valves* without dissepiments. *Seeds* 3, at the bottom of the cell. (*Leaves soft, plane, generally hairy*).—*Nat. Ord.* JUNCEÆ. *De Cand.*—Name: the *Gramen Luzulæ* of Bauhin. *Luzula,* Smith tells us, is altered from *lucciola* or *luzziola,* a *glow-worm:* because the heads of flowers, wet with dew, and sparkling by moonlight, gave the elegant Italians an idea of those brilliant insects. Hence the learned author of English Flora contends for *Luciola* as the proper orthography. But *Luzula* has been in such long and general use, and is indeed so little different from the name proposed to be substituted, that it will probably not be superseded by it.

H. 1. L. *sylvática*, Bich. (*great hairy Wood-rush*); leaves hairy, panicle subcymose, peduncles elongated of about 3 flowers, leaflets of the perianth aristate as long as the capsule. *Engl. Fl. v. ii. p.* 181.—*L. maxima, De Cand.*—*Hook. Scot. i. p.* 110.—*Juncus sylvaticus, Huds.*—*Engl. Bot. t.* 737.—*J. pilosus* δ, *Linn.*

Woods, hilly places, and upon the mountains frequent. "In the greatest plenty on St. Kilda, the cliff of which is covered with its bright green leaves; *M'Culloch. Fl.* May, June. ♃.—One to a foot and a half high. *Leaves* broad, shining, striated. *Floral bracteas* ciliated. *Caps.* with a very sharp point, deep brown. *Seeds* elliptic-ovate, with scarcely any crested appendage on the top.

H. 2. L. *pilósa*, Willd. (*broad-leaved hairy Wood-rush*); leaves hairy, panicle subcymose, peduncles 1-flowered bent back, leaflets of the perianth acuminate rather shorter than the obtuse capsule. *Hook. Scot. i. p.* 110. *Engl. Fl. v. ii. p.* 178.—*Juncus pilosus, Linn.*—*Engl. Bot. t.* 736.

Woods, frequent. *Fl.* April, May. ♃.—Much smaller than the last, with the *flowers* standing singly on the panicle, dark brown. *Seeds* with a curved appendage at the top.

H. 3. L. *Forstéri*, De Cand. (*narrow-leaved hairy Wood-rush*); leaves hairy, panicle subcymose but little branched, peduncles 1-flowered erect, leaflets of the perianth narrow acuminated a little longer than the acute capsule. *Hook. Scot. i. p.* 110. *Engl. Fl. v. ii. p.* 179.—*Juncus Forsteri, Engl. Bot. t.* 1293.

Groves and thickets, especially on a calcareous or gravelly soil. (*E. Fl.*). About Forfar, and banks of the Doun in Ayrshire, *Mr. Jas. Wilson. Fl.* May, June. ♃.—Much slenderer than the last in every part and taller. *Seed* with a large oblong crested appendage on the top.

H. 4. L. *campéstris*, Br. (*Field Wood-rush*); leaves hairy, spikes sessile and pedunculated, leaflets of the perianth acuminate longer than the obtuse capsule. *Hook. Scot. i. p.* 110. *Engl. Fl. v. ii. p.* 181.—*Juncus campéstris, Linn.*—*Engl. Bot. t.* 672.

β. taller, with the spikes of flowers collected into an almost orbicular head. *Hook. Scot. i. p.* 110. *De Cand. and Dub. Bot. Gall. p.* 479.—*L. congesta Lej.*—*De Cand. Fl. Fr. ed.* 3. *v.* 5. *p.* 305. *Engl. Fl. v. ii. p.* 181.

Woods and dry pastures, frequent, both α. and β. *Fl.* April, May. ♃.—From 4—6 or 8 inches, or even a foot or more high. *Flowers* collected into ovate or oblong, nearly erect *spikes*, of a reddish brown colour, sometimes very pale. In β. the *spikes* are nearly all sessile. De Cand. whom Smith quotes as the authority for considering this a distinct species, himself now in the *Bot. Gallicon*, makes it a var. of *campestris.* Indeed we find various intermediate states.—Even the *L. sudetica* of De Candolle will probably prove not permanently distinct from *campestris.*

5. L. *arcuáta*, Hook. (*curved Mountain Wood-rush*); leaves

canaliculate hairy, panicle subumbellate of few heads of from 3—5 flowers with long drooping peduncles, bracteas membranous fringed, capsule ovato-globose shorter than the broadly lanceolate leaflets of the perianth. *Hook. in Fl. Lond. N. S. t.* 153. *Engl. Fl. v. ii. p.* 183.

On the barren stony summits of the great Cairngorum range of mountains.—Upon Fonniven, a high mountain in Sutherland, *Prof. Graham.*—*Fl.* July. ♃.—The smallest of our *Luzulæ* and one of the rarest and most distinct. It approaches nearer to Mr. Brown's *Luzula hyperborea* than any other, but that wants the curved peduncles.

H. 6. L. *spicáta*, De Cand. *(spiked Mountain Wood-rush)*; leaves somewhat canaliculated, spike solitary drooping compound, spikelets shorter than their subdiaphanous mucronated bracteas, leaflets of the perianth mucronato-aristate about as long as the rotundate capsule. *Hook. Scot. i. p.* 111. *Engl. Fl. v. ii. p.* 182.

High mountains in the north of England, and more abundantly in Scotland. *Fl.* July. ♃.—6—8 inches high, slender. *Leaves* small, narrow, hairy only at the margins of the sheaths. *Spike* dark coloured, interrupted near the base. *Capsule* very dark, shining brown, acute.—Well distinguished by its drooping compound spike and narrow leaves.

(*See* Peplis in Ord. I. Polygonum in Cl. VIII.)

ORD. II. DIGYNIA. 2 *Styles.*

22. Oxýria. *Hil.* Mountain-Sorrel.

Cal. of two leaves. *Cor.* of 2 petals, a little larger than the *cal. Nut* triquetrous, with a broad membraneous margin. *Embryo* erect, inverted.—*Nat. Ord.* Polygoneæ. *Juss.*—Name from οξυς, *sharp* or *acid*, from the acid flavour of this, as of many other plants belonging to the same natural family.

H. 1. O. *renifórmis*, Hook. (*kidney-shaped Mountain-Sorrel*). *Hook. Scot. i. p.* 111. *Engl. Fl. v. ii. p.* 188.—*Rumex digynus, Linn. Engl. Bot. t.* 910.

North of England, Wales and Scotland, abundant in alpine situations, especially amongst moist rocks and within reach of the spray of cascades. *Fl.* July, Aug. ♃.—*Stems* 8—10 inches high, with rarely more than one leaf, often naked. *Radical leaves* numerous, all reniform, with a more or less evident obtuse sinus at the apex, on long footstalks, having membranaceous *stipules* at their base. *Racemes* and peduncles branched, with minute, ovate, membraneous *bracteas* at the base of each ramification. *Pedicels* thickened upwards. *Flowers* erect, small. *Stam.* 6, shorter than the petals. *Pistil* nearly orbicular-compressed, notched, with 2, spreading feathery *styles.* *Fruit* a *nut*, enclosed in an *utricle*, with a remarkably broad winged border, tipped with the *styles* situated in rather a deep notch; and having at the base the pointed petals, not at all enlarged.—This is the *Donia sapida* of Mr. Brown, in the first ed. of *Ross's Voyage to the Arctic Regions*; but it had been previously named *Oxyria.* Wahlenberg considers it a *Rheum* or *Rhubarb*, with one-third of the parts of fructification suppressed.

The leaves yield a most agreeably acid *flavour,* much resembling that of the *Wood-sorrel* (*Oxalis acetosella*).

ORD. III. TRIGYNIA. 3 *styles.*

23. Rúmex. *Linn.* Dock and Sorrel.

Cal. of 3 leaves, combined at the base. *Cor.* of 3 petals. *Stigmas* multifid. *Nut* triquetrous covered by the enlarged petals, which often bear tubercles.—*Nat. Ord.* Polygoneæ. *Juss.* Name of unknown origin.

* *Plants not acid. Flowers perfect.* (Lapathum *Dock*).

1. R. *Hydrolápathum,* Huds. (*great Water Dock*); enlarged petals ovato-deltoid reticulated each with a tubercle entire, leaves lanceolate, the lower ones cordate at the base, whorls mostly leafless. *Engl. Fl. v. ii. p.* 195. *Reichenb. ic. Bot. t.* 370.—*R. aquaticus, Sm. Fl. Br. p.* 394. *Engl. Bot. t.* 2104. *Hook. Scot. i. p.* 112.

Ditches and river-sides, frequent. *Fl.* July, Aug. ♃.—The largest of our *Docks,* from 3—5 feet high; some of the lower *leaves* a foot and a half long. *Root* large, very astringent. Enlarged *petals* with prominent veins, and large oblong tubercles.

2. R. *críspus,* Linn. (*curled Dock*); enlarged petals broadly cordate entire reticulated, tubercle on one large coloured, obsolete on the other two, leaves lanceolate waved acute, upper whorls leafless. *Engl. Bot. t.* 1998. *Hook. Scot. i. p.* 112. *Engl. Fl. v. ii. p.* 191.

Way-sides and near houses, pastures, &c. frequent. *Fl.* June, July, ♃.—Two or 3 feet high. *Lower leaves* the broadest, all waved and crisped at the margins. *Whorls* of *flowers* very numerous and crowded. Here the enlarged *petals* are truly cordate. Most authors say that each of the petals bears a tubercle. In my specimens, in those gathered by Mr. Wilson in Lancashire, and in those I have from Switzerland, one only bears a large oblong orange-coloured *tubercle,* the others have only the midrib a little swollen at the base. ✳

3. R. *aquáticus,* Linn. (*grainless Water Dock*); enlarged petals broadly cordate reticulated without tubercles, leaves lanceolate, the lower ones cordato-oblong crisped and waved, whorls crowded mostly leafless. *Reichenb. Icon. Bot. t.* 369. *Svensk. Bot. t.* 209.

Moist places, near Ayr. *Mr. Goldie. Fl.* July. ♃.—This was sent to me as a new species of *Rumex* by Mr. Goldie. It comes indeed very near to *R. crispus,* but the enlarged *petals* are quite destitute of grains or tubercles, and in this respect agrees so exactly with the true *aquaticus* of Linn. (*see Engl. Fl. v. ii. p.* 196,) and so well with the figures above quoted, that I have little hesitation in referring it to that plant.

4. R. *alpínus,* Linn. (*alpine Dock, or Monk's Rhubarb*); enlarged petals cordate reticulated obscurely toothed at the margin, one bearing a small grain, leaves broadly cordate ample, whorls

✳ R. pratensis - App. 14.

leafless crowded, flowers monœcious. *Campd. Rum. p.* 105.—*R. cordifolius, Horn.—Reichenb. Icon. Bot. t.* 487.

Way-side on the road from Helensburgh to the head of the Gare-Loch.—Glen Luss, near Loch Lomond, *Rev. Mr. Berkeley. Fl.* July. ♃.

This most distinct species of *Rumex* has been found both by the *Rev. Mr. Berkeley* and myself in the Scottish Highlands, and far removed from any place where it is at all likely to have been cultivated—for I am aware that its *root* was formerly employed in lieu of *Rhubarb. Leaves* a span broad, cordate, very obtuse, wrinkled and reticulated; *upper ones* ovato-lanceolate: *whorls* of *flowers* very dense.

5. R. *sanguíneus*, Linn. (*bloody-veined, and* (β.) *green-veined Dock*); enlarged valves (small) oblong entire, one at least bearing a tubercle, leaves lanceolate somewhat cordate, whorls distant on long generally leafless branches.

α. Leaves with bright red veins. *R. sanguineus, Linn.—Engl. Bot. t.* 1533. *Hook. Scot. i. p.* 112. *Engl. Fl. v. ii. p.* 190.

β. Leaves with green veins. *R. viridis, Sibth.—Sm. Fl. Brit. p.* 390. —*R. Nemolapathum, Ehrh.*

Shady pastures, woods and road sides. β. far more frequent than α. *Fl.* July. ♃.

6. R. *acútus*, Linn. (*sharp Dock*); "enlarged petals oblong obscurely toothed all tuberculated, leaves oblong-heart-shaped pointed, clusters leafy." *Sm.—Engl. Bot. t.* 724. *Hook. Scot. i. p.* 112. *Engl. Fl. v. ii. p.* 192.

Moist deep soils, and in watery places, not uncommon. *Fl.* July. ♃. —Much resembling var. β. of the last species, and appearing to me to differ chiefly in its leafy *whorls* and more coloured *flowers*. But Smith says it is a totally different plant, and that it always grows in watery places.

7. R. *púlcher*, Linn. (*Fiddle Dock*); enlarged petals ovate deeply toothed, one of them principally bearing a tubercle, root-leaves panduriform, stem spreading. *Engl. Bot. t.* 1576. *Hook. Scot. i. p.* 113. *Engl. Fl. v. ii. p.* 193.

Pastures, way-sides, &c. *Fl.* Aug. ♃.—*Stems* very straggling; *whorls* distant, on slender leafy branches.

8. R. *obtúsifolius*, Linn. (*broad-leaved Dock*); enlarged petals ovate toothed at the base, one principally bearing a tubercle, root-leaves ovato-cordate, stem roughish. *Engl. Bot. t.* 1999. *Hook. Scot. i. p.* 113. *Engl. Fl. v. ii. p.* 192.

Way-sides and waste places, too frequent. *Fl.* July. ♃.—Two to three feet high. *Whorls* rather close, somewhat leafy. Distinguishable by its broad and obtuse radical *leaves*, which are generally crisped at the margin. *Stem* scabrous between the elevated lines or ridges.

H. 9. R. *marítimus*, Linn. (*golden Dock*); enlarged petals deltoid fringed with setaceous teeth and bearing grains, whorls much crowded, leaves linear-lanceolate. *Engl. Bot. t.* 723. *Hook. Scot. i. p.* 113. *Engl. Fl. v. ii. p.* 193.—*R. aureus, With.*

Marshes, principally near the sea. *Fl.* July, Aug. ♃.—Well distinguished from every preceding species by its narrow *leaves*, excessively crowded *flowers*, bright, almost orange-coloured, enlarged *petals*, and their setaceous, or, I might almost say, spinous *teeth*.

10. R. *palústris*, Sm. (*yellow Marsh Dock*); enlarged petals lanceolate with short setaceous teeth near the base and bearing tubercles, whorls remote, leaves linear-lanceolate. *Engl. Bot. t.* 1932. *Hook. Scot. i. p.* 113. *Engl. Fl. v. ii. p.* 194.

Marshy places, remote from the sea. *Fl.* July. ♃.—Nearly allied to the last, and I had an idea that it was not really distinct from it: but Sir James E. Smith considers it to be permanently different in the form of the *petals*, when in *seed*, and in the number, shape, length and situation of the *teeth* which border them.

** *Flowers diœcious. Plants acid.* (Acetosa *or* Sorrels.)

11. R. *acetósa*, Linn. (*common Sorrel*); enlarged petals orbiculari-cordate reticulated scarcely tuberculated, leaves oblongo-sagittate. *Engl. Bot. t.* 127. *Hook. Scot. i. p.* 113. *Engl. Fl. v. ii. p.* 196.

Meadows and pastures, frequent. *Fl.* June, July. ♃.—One to 2 feet high. *Petals* becoming large, purplish, orbiculari-cordate, obtuse, membranous, reticulated with veins; tubercles very small, almost obsolete. I do not find the enlarged petals to be ovate, as Sir James Smith describes them, nor does Mr. Wilson; but orbicular and cordate.

H. 12. R. *acetosélla*, Linn. (*Sheep's Sorrel*); enlarged petals ovate not tuberculated, lower leaves lanceolato-hastate, lobes entire. *Engl. Bot. t.* 1674. *Hook. Scot. i. p.* 113. *Engl. Fl. v. ii. p.* 197.

Dry pastures, frequent. *Fl.* May—July. ♃.—Variable in the size, from 2—10 inches, and in the form of its *leaves;* for, frequently, *only* the *radical* ones are of the shape above described, at other times many of the *cauline* ones are so too; the rest are lanceolate, more or less petiolate, entire. In every part much smaller than the last. In very dry situations and at the end of the summer the whole plant becomes of a rich red colour.—The true *garden Sorrel* is *R. scutatus*, a native of the continent of Europe; but this is not unfrequently cultivated and mixed with it.

24. Tofiéldia. *Huds.* Scottish Asphodel.

Perianth single, 6-partite, having a small, tripartite *involucre. Stamens* glabrous. *Caps.* 3—6 celled; *cells* united at the base, many-seeded.—*Nat. Ord.* Melanthaceæ. *Br.*—Named in honour of *Mr. Tofield*, an English Botanist.

H. 1. T. *palústris*, Huds. (*Scottish Asphodel*); spike ovate, stem glabrous filiform nearly leafless, petals obovate obtuse, germen 3-lobed, involucre at the base of the pedicel. *Engl. Bot. t.* 536. *Hook. in Fl. Lond. N. S. t.* 105. *Hook. Scot. i. p.* 114. *Engl. Fl. v. ii. p.* 198.—*T. borealis, Wahl.*—*Anthericum calyculatum, Linn.*

Mountains of England, Scotland and Ireland; in boggy places, not rare. *Fl.* July, Aug. ♃.—From 4—6 inches high. *Leaves* almost wholly radical, in fascicles, linear, sword-shaped, equitant. *Flowers* small, pale yellowish-white.

25. SCHEUCHZÉRIA. *Linn.* Scheuchzeria.

Perianth single, petaloid, of 6 leaves. *Anthers* elongated. *Capsules* 3, inflated, 2-valved, one-seeded.—*Nat. Ord.* JUNC~~EÆ~~. *Juss.*AGINEÆ Named in honour of the 3 *Scheuchzers*, Swiss Botanists.

1. S. *palústris*, Linn. (*Marsh Scheuchzeria*). *Engl. Bot. t.* 1801. *Engl. Fl. v. ii. p.* 199.

In a marsh at Lakeby Car, near Borough-bridge, Yorkshire; discovered by the *Rev. James Dalton*. *Fl.* June. ♃.—A singular and very rare plant, having few, semicylindrical, slender, rush-like *leaves*; a *scape* with large bracteæ, terminated by a raceme of greenish *flowers*. *Perianth* and *stamens* reflexed. *Germens* 3, ovate, obtuse, with lateral, linear, downy *stigmas*. *Capsules* singularly inflated.

26. TRIGLÓCHIN. *Linn.* Arrow-grass.

Perianth of 6, concave, deciduous leaves, 3 outer and 3 inner. *Anthers* sessile, lodged in the leaves of the *perianth*, with their backs towards the pistil. *Capsules* 3—6, 1-seeded, united by a longitudinal receptacle, from which they separate at the base.—*Nat. Ord.* JUNCAGINEÆ. *Rich.*—Name from τρεις, *three*, and γλωχις, a *point*, from the three points of the capsules.

H. 1. T. *palústre*, Linn. (*Marsh Arrow-grass*); fruit 3-celled nearly linear. *Engl. Bot. t.* 366. *Hook. Scot. i. p.* 114. *Engl. Fl. v. ii. p.* 200.

Wet meadows, and by the sides of rivers and ditches in marshy situations, plentiful. *Fl.* Aug. ♃.—*Leaves* all radical, linear, fleshy, slightly grooved on the upper side, sheathing and membranous at the base. *Scape* 8—10 inches high, terminating in a lax, simple *spike* or *raceme*. *Flowers* small, greenish. *Capsules* 3, linear, united by a common receptacle, so as to form one 3-celled *fruit*, each cell separating at its base and suspended by the extremity, containing one *seed* and not dehiscent.—Mr. W. Wilson finds that the leaves, when bruised, yield a very fetid smell, and that the root, under certain circumstances at least, is a creeping one; sending out jointed, scaly runners, with comparatively large, ovate, shortly acuminated *bulbs* at the extremity. These bulbs at the end of the jointed runners have very much the appearance of a scorpion's tail.

H. 2. T. *marítimum*, Linn. (*Sea-side Arrow-grass*); fruit 6-celled ovate. *Engl. Bot. t.* 255. *Hook. Scot. i. p.* 114. *Engl. Fl. v. ii. p.* 201.

Salt marshes, not unfrequent. *Fl.* May, Aug. ♃.—Larger than the last and stouter, differing essentially in its fruit, which is formed of 6 combined *capsules*, constituting a broadly ovate *fruit*; not separating from the base and suspended by their summits as in *T. palustre*. Even when in flower, the same distinction is observable in the germen as in the fruit.

27. CÓLCHICUM. *Linn.* Meadow-saffron.

Perianth single, tubular, very long, rising from a spatha; *limb* campanulate, 6-partite, petaloid. *Caps.* 3-celled; *cells* united at the base.—*Nat. Ord.* Melanthaceæ. *Br.*—Named from *Colchis,* where it was said to grow abundantly.

H. 1. C. *autumnále,* Linn. (*common Meadow-saffron*); leaves plane broadly lanceolate erect. *Engl. Bot. t.* 133. *Hook. Scot. i. p.* 144. *Engl. Fl. v. ii. p.* 202.—*Var. with late, green, abortive flowers. Engl. Bot. t.* 1432.

Meadows and pastures, chiefly in the north-west of England, *Ray.* In Suffolk, Oxfordshire, Staffordshire, Cheshire, (*Mr. Jonathan Gaskarth*), and other places. Alloa, Scotland. *Lightf. Fl.* Sept. Oct.—Fruit and leaves in the spring. ♃.—*Bulb* solid. The *flowers* appear in succession, rising from the bulb, with a very long, narrow tube, surrounded at the base with a membranous sheath. The *stamens* are inserted on the oblong-ovate segments of the pale purple *perianth. Germen* at the base of the bulb, its long thread-like *styles* running up the whole length of the tube. The *leaves* and *fruit* appear in spring and are withered before summer. Its properties are said to be similar to those of the *officinal Squill,* and it has been employed as a substitute for the famous *Gout-medicine,* commonly called *Eau médicinale.*

ORD. IV. HEXAGYNIA. 6 *Styles.*

28. Actinocárpus. *Br.* Star-fruit.

Cal. of 3 leaves. *Petals* 3. *Germens* 6—8. *Capsules* combined at the base, spreading in a radiated manner, two-seeded. *Embryo* much curved.—*Nat. Ord.* Alismaceæ. *De Cand.*—Name from ακτιν, *a ray,* and καρπος, *a fruit,* in consequence of its curiously radiated fruit resembling a *star-fish.*

1. A. *Damasónium,* Br. (*common Star-fruit*); capsules 6 subulate compressed opening longitudinally, leaves 5-nerved. *Hook. in Fl. Lond. ed.* 2. *cum Ic.*—*Alisma Damasonium, Linn.*—*Engl. Bot. t.* 1615. *Engl. Fl. v. ii. p.* 204.

Ditches and pools, mostly in a gravelly soil, and chiefly in the middle and south-eastern counties of England. *Fl.* June, July. ♃.—*Leaves* radical, on long petioles, floating, elliptical. *Scapes* with a terminal *umbel,* generally proliferous. *Petals* white, very delicate, obcordate, each having a yellow spot at the base. *Capsules* with two *seeds* upon evident stalks, one from the upper angle, horizontal, the other from the lower angle of the axis, erect, oblong, tubercled and transversely striated, compressed, with a deep furrow on each side, occasioned by the form of the *embryo* within, which is bent double, somewhat like a horse-shoe, and is cylindrical.

ORD. V. POLYGYNIA. *Many Styles.*

29. Alísma. *Linn.* Water-Plantain.

Cal. of 3 leaves, *Petals* 3. *Capsules* many, clustered, distinct, indehiscent, one-seeded. *Embryo* much curved.—*Nat. Ord.* Alismaceæ. *De Cand.*—Name from *alis, water,* in Celtic. The genus is altogether aquatic.

1. A. *Plantágo,* Linn. (*greater Water-plantain*); leaves ovate

acute, fruit depressed, capsules obtusely trigonal. *Engl. Bot. t.* 837. *Hook. Scot. i. p.* 114. *Engl. Fl. v. ii. p.* 203.

Near the margins of lakes, rivers and ditches, frequent. *Fl.* July. ♃.—Two to three feet high. *Leaves* all radical, on long stalks. *Scape* branched upward; *branches* all whorled, bracteated, compound: *flowers* of a pale rose-colour. *Embryo* curved, as in *Actinocarpus.*—Mr. Hopkirk finds a variety in Scotland with lanceolate leaves.

2. A. *nátans,* Linn. (*floating Water-plantain*); leaves elliptical obtuse, stem floating and rooting, peduncles simple. *Engl. Bot. t.* 775. *Engl. Fl. v. ii. p.* 204.

Lakes in North Wales and in Cumberland: very rare in Scotland. It has recently been found in the Black Loch, 6 miles from Stranraer, by *Mr. James Smith.* On Howth and in Cunnamara, Ireland; *Mr. J. T. Mackay.*—*Fl.* July, Aug. ♃.—At the base of the plant are long, linear-lanceolate, membranous *scales,* or abortive *root-leaves. Stem-leaves* floating, on long stalks, scarcely nerved.

H. 3. A. *ranunculoídes,* Linn. (*lesser Water-plantain*); leaves all radical linear-lanceolate, scape umbellate, fruit globose squarrose, capsules acute. *Engl. Bot. t.* 326. *Hook. Scot. i. p.* 115. *Engl. Fl. v. ii. p.* 205.

β. With creeping runners. *A. repens,* "*Davies' Welsh Bot.* 36." *Engl. Fl. v. ii. p.* 205.

Ditches and turfy bogs, not unfrequent in England, Scotland, and Ireland. β. In Lakes, North Wales; *Rev. H. Davies and Mr. W. Wilson. Fl.* Aug. Sept. ♃.—In general appearance most allied to *A. Plantago,* especially the narrow-leaved varieties of that plant. But it is much smaller, having larger *flowers,* pale-coloured, arranged in *umbels,* which are often proliferous. The most essential character is to be found in the *germen* and *fruit.* Sir James E. Smith seems, himself, in the corrections and additions to his *Engl. Flora, v. iv. p.* 266, to consider the *A. repens* as a mere variety of *A. ranunculoides.*

CLASS VII. HEPTANDRIA. 7 *Stamens.*

ORD. I. MONOGYNIA. 1 *Style.*

1. TRIENTÁLIS. *Rupp.* Chickweed Winter-green.

Cal. of 7 leaves. *Cor.* monopetalous, in 7 deep segments, regular and flat. *Caps.* 1-celled, with 7 valves, and many seeds on a fleshy, central, free receptacle. *Seeds* with a reticulated tunic.—*Nat. Ord.* PRIMULACEÆ. *Juss.*—Name, from *triens,* a third part; and said to allude to this plant being one-third of a foot in height. But such a meaning is very equivocal.

H. 1. T. *europæa,* Linn. (*European Chickweed Winter-green*); leaves oblongo-obovate obtuse. *Engl. Bot. t.* 15. *Hook. Scot. i. p.* 115. *Hook. in Fl. Lond. N. S. t.* 161. *Engl. Fl. v. ii. p.* 208.

Woods in the north of England, but rare. Abundant in many parts of the Highlands of Scotland. Not found in Ireland. *Fl.* June.

♃.—*Root* filiform, creeping. *Stems* 4—6 inches high, with 2 or 3 small, distant *leaves*, and 4—7 terminal, whorled larger ones; from the centre of which arise 1—4, slender, single-flowered *peduncles*. *Cal.*-leaflets almost subulate, varying in number from 6—9, as do all the other parts of the flower, and the valves of the capsule. The *fruit* had always been misunderstood, till Sir James Smith described it in Rees' Cyclopædia. The beautiful covering, like the finest white lace, of its *seeds*, had been taken for a pericarp; because few Botanists had seen the very fugacious, horny *valves* of its *capsule*. (*See Fl. Lond. N. S. t.* 161). This is assuredly one of the most interesting of our Highland vegetable productions, and like *Butomus*, is the only British example of a plant of its class. The *T. americana* is a very different species from this, having lanceolate leaves. It is worthy of remark, however, that the *Trientalis* of *N.West America* is the same as ours, and as the Siberian one.

CLASS VIII. OCTANDRIA. 8 *Stamens.*

ORD. I. MONOGYNIA. 1 *Style.*

* *Flowers complete, (having Cal. and Cor.) Gen.* 1—8.

1. ACER. *Linn.* Maple.

Cal. 5-cleft, inferior. *Pet.* 5. *Germen* 2-lobed. *Capsules* 2, united at the base, each with a long winged membrane, (hence called a *Samara*), 1-celled, 1—2-seeded.—*Nat. Ord.* ACERINEÆ. *Juss.*—Name, from *acer, sharp* or *hard* (*ac*, Celtic), on account of the hardness of the wood, which was employed in fabricating spears, pikes, &c. The *Maple* is the badge of the Clan *Oliphant* in Scotland.

1. A. *Pseudo-plátanus*, Linn. (*greater Maple or Sycamore*); leaves 5-lobed unequally serrated, racemes pendulous subtomentose. *Engl. Bot. t.* 303. *Hook. Scot. i. p.* 120. *Engl. Fl. v. ii. p.* 230.

In hedges, plantations, and about houses, not indigenous. *Fl.* May, June, ♄.—A large *tree*, with spreading *branches* and ample *leaves*. *Flowers* greenish. *Fruit* with two ^ long membranaceous wings, which greatly aid in its dispersion. The *wood* is used for bowls and trenchers and other turnery; and the Highlanders are said to make a wine of its sap. From the allied species, *A. saccharinum*, the Canadians extract a valuable sugar.—"The cotyledons vary from 1—4." (*Rev. Prof. Henslow.*)

Sometimes ^ 3

2. A. *campéstre*, Linn. (*common Maple*); lobes of the leaves mostly 5 inciso-crenate, racemes upright subtomentose. *Engl. Bot. t.* 304. *Hook. Scot. i. p.* 120. *Engl. Fl. v. ii. p.* 230.

Woods and thickets; not common in Scotland, and perhaps neither indigenous there, nor in Ireland. (*Mr. J. T. Mackay*). *Fl.* May, June, ♄.—A small *tree* with rough bark, full of deep fissures. *Leaves* small. *Wood* often beautifully veined, and then much valued.

2. CHLÓRA. *Linn.* Yellow-wort.

Cal. inferior, of 8 deep segments. *Cor.* of 1 petal, nearly rotate. *Stigmas* 2, bifid. *Caps.* 1-celled, 2-valved, many-seeded.

—*Nat. Ord.* Gentianeæ. *Juss.*—Name derived from χλωρος, *pale* or *yellowish green,* in allusion to the colour of its flowers.

1. C. *perfoliáta,* Linn. (*perfoliate Yellow-wort*); leaves connato-perfoliate ovate glaucous. *Engl. Bot. t.* 60. *Engl. Fl. v. ii. p.* 218.

Chalky and hilly pastures, chiefly in the middle and southern parts of England. In Ireland, on gravelly soil about Dublin, frequent; *Mr. J. T. Mackay.* Not found in Scotland. *Fl.* July—Sept. ⊙.—Allied to the *Gentians. Plant* very glaucous, with remote *leaves;* panicled above, and bearing many bright yellow *flowers;*—very bitter.

3. Menziésia. *Sm.* Menziesia.

Cal. cleft to the base into 4—5 deep segments, inferior. *Cor.* of 1 *petal,* ventricose. *Stam.* 8—10. *Capsule* 4—5-celled, the dissepiments formed by the inflexed margins of the valves, and opening between these dissepiments.—*Nat. Ord.* Ericeæ. *Juss.*—Name, "Nomen dedi," says the learned founder of this Genus, "in honorem *Archibaldi Menzies* Scotici, peregrinatoris et botanici indefessi, priscæ fidei ac urbanitatis viri."

1. M. *cærúlea,* Sm. (*Scottish Menziesia*); leaves scattered numerous linear toothed, flower-stalks terminal aggregate simple, flowers 5-cleft decandrous. *Engl. Bot. t.* 2469. *Hook. Scot. i. p.* 126. *Engl. Fl. v. ii. p.* 222.

Heathy Moor near Aviemore in Strathspey, *Mr. Brown of Perth;* and in the western isles of Shiant, *Mr. G. Don, and Dr. de Ramm.* (*Engl. Fl.*) *Fl.* June, July, ♄.—A small *shrub; stems* branched, woody and naked below. *Peduncles* 2 inches long, glandular, reddish. *Flowers* large, beautiful, purple-blue. *Cor.* urceolate.—This plant is far more common in North America than in Scotland. It scarcely yields in beauty to the following species.

H. 2. M. *polifólia,* Juss. (*Irish Menziesia*); leaves ovate, the margins revolute white and downy beneath, flowers 4-cleft octandrous in terminal leafy racemes. *Engl. Fl. v. ii. p.* 223.—*Erica Dabeoci, Linn.*—*Engl. Bot. t.* 35.

Mountainous heaths in Ireland, *Ray.* Crough Patrick, Co. Mayo. Abundant in Cunnamara, *Wade* and *Mr. J. T. Mackay. Fl.* June, July. ♄.

This beautiful plant, frequently cultivated in gardens, is not, as some have supposed, peculiar to Ireland, as an indigenous plant. It is found in the Western Pyrénées and in Anjou.

4. Eríca. *Linn.* Heath.

Cal. of 4 leaves, inferior. *Cor.* of 1 *petal,* campanulate, often ventricose. *Capsule* 4-celled, 4-valved, dissepiments from the middle of the valves.—*Nat. Ord.* Ericeæ. *Juss.*—Name from ερικω, to *break;* because it was formerly supposed to have the power of destroying calculi in the bladder.

No heath has yet been found in America. It extends in a longitudinal zone from Norway to The Cape whence 400 species have been sent to England. Heather-tops formerly used instead of Malt.

H. 1. E. *Tétralix*, Linn. (*Cross-leaved Heath*); anthers with two acute awns at the base, corolla ovate as long as the style, leaves 4 in a whorl ciliated, flowers capitate. *Engl. Bot. t.* 1014. *Hook. Scot. i. p.* 119. *Engl. Fl. v. ii. p.* 226.

Heaths and moory ground, abundant. *Fl.* July, Aug. ♄.—*Flowers* next in size to those of the rare *E. ciliaris*, delicate, rose-coloured, sometimes white, drooping. They have been found cleft into several divisions and with the stamens turned into petaloid segments, by Mr. *W. C. Trevelyan.*—The *Cross-leaved Heath* is the badge of the *Macdonalds.*

H. 2. E. *cinérea*, Linn. (*fine-leaved Heath*); anthers with 2 serrated appendages at the base, style a little exserted, corolla ovate, stigma capitate, leaves ternate. *Engl. Bot. t.* 1015. *Hook. Scot. i. p.* 119. *Engl. Fl. v. ii. p.* 226.

Heaths, abundant. *Fl.* July, Aug. ♄.—*Flowers* in rather large whorled *racemes*, drooping, reddish-purple. *Leaves* nearly linear, glabrous. This plant is used for various œconomical purposes, and its flowers are sometimes white.—It is the badge of the Clan *Macallister.* *

H. 3. E. *vágans*, Linn. (*Cornish Heath*); anthers without awns bifid and as well as the style exserted, corolla campanulate, leaves 4 in a whorl, flowers axillary crowded. *Engl. Bot. t.* 3. *Engl. Fl. v. ii. p.* 227.—*E. multiflora, Huds.* (not Linn.)

On heaths in Cornwall, abundantly. (*Engl. Fl.*) The *Rev. J. S. Tozer* assures me that it is only found at Gonhilly near the Lizard, and is thence called "*Gonhilly*" not Cornish, *Heath.* *Fl.* July, Aug. ♄.—Well distinguished from all our British *Ericæ* by its campanulate, not ovate, *corollas.* See genus

H. 4. E. *ciliáris*, Linn. (*ciliated Heath*); anthers simple bifid included, corolla ovate inflated, leaves 4 in a whorl ciliato-glandulose, flowers in terminal unilateral racemes. *Lindl. Syn. p.* 174. *Hook. in Engl. Bot. Suppl. ined.*

Boggy (never on dry) ground, Cornwall. Near Truro; and most abundantly at East Croft, *Rev. J. S. Tozer.* Heath at Carclew near Penryn, frequent, and on a heath in the parish of St. Agnes, on the north coast of Cornwall; *Sir Charles Lemon, Bart.* *Fl.* June, July, ♄.—Communicated to me in Sept. 1828, by my valued correspondent, the *Rev. J. S. Tozer*, of Truro. It is unquestionably the most interesting and beautiful addition that has been made to our British Flora for many years. The *flowers* are as large as those of *Menziesia cærulea*, and more highly coloured, while the *leaves* are elegantly fringed with hairs and each hair is tipped with a gland. Dorsetshire

5. Callúna. *Salisb.* Ling.

Cal. of 4 coloured leaves, inferior, concealing the *cor.*, accompanied by 4 *bracteas*, resembling an outer calyx. *Cor.* campanulate. *Caps.* 4-celled, 4-valved; dissepiments adhering to the *axis* of the fruit, *valves* opening at the dissepiments and separating from them.—*Nat. Ord.* Ericeæ. *Juss.*—Name from καλλυνω, to

* Erica mediterranea. App. 15.

4. Erica Mackaii

cleanse or *adorn*, and hence peculiarly applicable, as Sir James E. Smith observes, to this plant, whether we consider the beauty of its flowers, or the circumstance of Brooms being made of its twigs. —The *Ling* is the badge of the Clan *Macdonell.*

H, 1. C. *vulgáris*, Salisb. (*common Ling*). *Hook. Scot. i. p.* 119. *Engl. Fl. v. ii. p.* 225.—*Erica vulgaris, Linn.*—*Engl. Bot. t.* 1013.

Heaths and moors, common; sometimes with white flowers. *Fl.* June, Aug. ♄.—A low, much branching, tufted *shrub. Leaves* small, opposite, with two small decurrent spurs at the base, more or less pubescent, and even hairy in β. of Sm. (the *E. ciliaris*, Huds. not Linn.), closely imbricated in 4 rows. *Flowers* small, reddish, drooping, nearly sessile, ovate. It varies much in the colour of its flowers and degree of pubescence of the leaves; and besides the more commonly known varieties, Mr. Stewart Murray finds in this "land of brown heath," two states which he cultivates in the Glasgow Botanic garden, where they have retained their differences for years.

Var. 1. Leaves compact crowded and as well as the branchlets pubescent, branches short, flowers deep red.—Found in Aberdeenshire. *Mr. S. Murray.*

Var. 2. Leaves compact and as well as the branchlets pubescent, branches elongated, flowers white.—Found in Arran. *Mr. S. Murray.* It bears *flowers* later than the other varieties.

This plant is much employed for brooms as well as fuel; and it makes an excellent edging to borders in gardens, and bears clipping as well as *Box.* The Icelanders say that when the *Ling* bears a profusion of blossoms, a severe winter may be expected.

6. VACCÍNIUM. *Linn.* Whortle-Berry.

Cal. 4—5-toothed, superior. *Cor.* of 1 *petal*, ovate, campanulate or rotate, 4—5 fid. *Anthers* with two pores. *Berry* globose, 4-celled, many-seeded.—*Nat. Ord.* VACCINIEÆ. *De Cand.*—Name; some say the ὑακινθος, of the Greeks, and hence synonymous with *Hyacinthus;* but the etymology of the word is unknown.

* *Leaves deciduous. Anthers with 2 dorsal awns.*

H 1. V. *Myrtíllus*, Linn. (*Bilberry* or *Whortle-berry*); peduncles 1-flowered, leaves ovate serrate deciduous, stem angular, stamens 8—10. *Engl. Bot. t.* 456. *Hook. Scot. i. p.* 118. *Engl. Fl. v. ii. p.* 219.

Woods and heathy places, chiefly in mountainous or alpine districts, abundant. *Fl.* May. ♄.—A small *shrub*, about 1 foot high. *Flowers* drooping, urceolate, almost waxy, greenish with a red tinge. *Anthers* tubular, each cell opening by a pore at the extremity, and having a horn at the back. *Berries* black, glaucous, very agreeable to the taste, and much eaten in the Highlands of Scotland.

2. V. *uliginósum*, Linn. (*great Bilberry*, or *Bog Whortle-Berry*); peduncles 1-flowered, leaves obovate entire veined deciduous, stems rounded. *Engl. Bot. t.* 381. *Hook. Scot. i. p.* 118. *Engl. Fl. v. ii. p.* 220.

In mountain bogs, Cumberland and Westmoreland; more frequent in the Highlands of Scotland, ascending even nearly to the summits of the mountains. *Fl.* May ♄.—*Leaves* glaucous, especially beneath. *Cor.* ovate, flesh-coloured, smaller than in the last; *anthers* similar. *Berries* agreeable, but inferior in flavour to those of *V. Myrtillus.*—The leaves are added to *Lycopodium alpinum* by the Icelanders, in order to produce a yellow dye, for colouring woollens.

** *Leaves persistent, evergreen. Anthers hornless at the back.*

H. 3. V. *Vitis Idæa*, Linn. (*red Whortle-berry, Cow-berry*); racemes terminal drooping, flowers campanulate, leaves evergreen oboate dotted beneath, their margins slightly revolute nearly entire. *Engl. Bot. t.* 598. *Hook. Scot. i. p.* 118. *Engl. Fl. v. ii. p.* 220.

Dry places on heaths, mountains and in woods, in the north of England, Wales, Scotland, and Ireland. *Fl.* May, June. ♄.—A low, somewhat straggling *shrub*, with *leaves* resembling those of the *Box*. *Flowers* pale flesh-coloured, open at the mouth, and with deeper and more spreading segments than the two preceding *Vaccinia;* hence, as well as in the absence of horns at the back of the anthers and in its evergreen foliage, it seems to connect the following species with the rest of the Genus.—The *red Whortle-berry* is the badge of the Clan *Macleod.*—A dwarf variety, very bushy, with leaves much crowded, and only half the size of the common plant, but having its flowers full as large, is found by Mr. Murray on the Campsie and Arran hills. It retains its characteristics in the gardens, where, in England, it has been long known under the name of *V. buxifolium.*

H. 4. V. *Oxycóccos*, Linn. (*Marsh Whortle-berry, Cran-berry*); peduncles terminal single-flowered, leaves ovate evergreen glaucous beneath, their margins revolute and entire, cor. 4-partite revolute, stem filiform. *Engl. Bot. t.* 319. *Hook. Scot. i. p.* 119. *Engl. Fl. v. ii. p.* 221.—*Oxycoccos palustris, Rich.*—*Lindl. Syn. p.* 134.

Peat-bogs, especially among *Sphagnum*, in various parts of England, Scotland, and Ireland. *Fl.* June. ♄.—*Stems* straggling, wiry, 8—10 inches long. *Leaves* small. *Flowers* of a bright rose-colour. *Cor.* deeply divided, the segments singularly revolute; on which account it has been by some Botanists removed from *Vaccinium.* It is the *Schollera* of Roth's *Flora of Germany.* The fruit is highly agreeable, making the best of tarts, far superior to the foreign *V. macrocarpon* which is largely imported to this country. At Longtown, on the borders of Cumberland, the fruit of the *Cranberry* forms no inconsiderable article of trade. It is the badge of the Clan *Grant.*

7. ŒNOTHÉRA. *Linn.* Evening-primrose.

Cal. superior, tubular, with a deeply 4-cleft *limb;* the segments reflexed, more or less combined. *Pet.* 4. *Caps.* 4-valved, with many naked *seeds.*—*Nat. Ord.* ONAGRARIÆ. *Juss.*—Name from οινος, *wine*, and θηρα, *searching*, or *catching*, from the root having caught the perfume of wine.

1. O. *biénnis*, Linn. (*common Evening-primrose*); leaves ovato-

lanceolate toothed, stem somewhat hairy, flowers sessile subspicate stamens about as long as the corolla, capsules nearly cylindrica, 4-toothed. *Engl. Bot. t.* 1534. *Engl. Fl. v. ii. p.* 211.

Sandy soils near Liverpool, also in Suffolk and Warwickshire. *Fl.* July—Sept. ♂.—This Genus is altogether American. The present species was introduced to our gardens, is most extensively cultivated and has escaped into waste ground, where, meeting with a favourable soil, it has become apparently indigenous. *Plant* 2—3 feet high. *Stem* roughish. *Flowers* yellow, fragrant, expanding in the evening.

8. EPILÓBIUM. *Linn.* Willow-herb.

Cal. superior, 4-partite, segments free, deciduous. *Pet.* 4. *Capsule* elongated, 4-sided, 4-celled, 4-valved, many-seeded. *Seeds* with a tuft of hairs at one extremity.—*Nat. Ord.* ONAGRARIÆ. *Juss.*—Name from επι, *upon*, and λοϐος, *a pod:* the flower being placed upon the top of the elongated seed-vessel.

* *Flowers irregular. Stamens bent down.*

1. E. *angustifólium*, Linn. (*Rose-bay Willow-herb, Persian or French Willow*); leaves scattered linear-lanceolate veined glabrous, flowers irregular subspicate, stamens declined. *Engl. Bot. t.* 1947. *Hook. Scot. i. p.* 116. *Engl. Fl. v. ii. p.* 212. leaves used to adulterate tea

Moist banks and margins of woods; rare in England, frequent in very many parts of Scotland. Near Enniskerry, Ireland, *Mr. J. T. Mackay.* *Fl.* July. ♃.—*Stems* 4—6 feet high. Whole *plant* very handsome. The American state of it, as cultivated in the Glasgow Botanic Garden, is much smaller in its stem, leaves and flowers, and with a very different habit.

** *Flowers regular. Stamens erect. Stigmas 4-cleft.*

Codlins & cream, from the smell

2. E. *hirsútum*, Linn. (*great hairy Willow-herb*); leaves semi-amplexicaul ovato-lanceolate deeply serrate hairy, stem very much branched hairy, root creeping, stigma 4-cleft. *Engl. Bot. t.* 838. *Hook. Scot. i. p.* 117. *Engl. Fl. v. ii. p.* 213.

Sides of ditches, rivers and lakes, frequent. *Fl.* July. ♃.—Almost equal in size to the last. *Root* perennial, creeping. *Flowers* corymbose, large.

3. E. *parviflórum*, Schreb. (*small-flowered hairy Willow-herb*); leaves sessile lanceolate slightly toothed downy on both sides, stem nearly simple very downy, stigma 4-cleft, root fibrous. *Engl. Bot. t.* 795. *Hook. Scot. i. p.* 117. *Engl. Fl. v. ii. p.* 214.

Marshes and banks of lakes and rivers, frequent. *Fl.* July. ♃.—The much smaller size of this species, in all its parts, being scarcely more than 1 foot to 1½ high, besides the above characters, serves to distinguish it from the preceding, with which it has been confounded.

4. E. *montánum*, Linn. (*broad smooth-leaved Willow-herb*); leaves ovate acute shortly petiolate glabrous all toothed, stem

rounded pubescent as well as the fruit, stigma 4-cleft. *Engl. Bot. t.* 777. *Hook. Scot. i. p.* 117. *Engl. Fl. v. ii. p.* 214.

Dry shady banks, walls, roofs of cottages, &c. frequent. *Fl.* July. ♃.—Six inches to a foot high. Much resembling the following; but essentially distinguished by its 4-fid *stigma.* It has, too, more shortly petiolate, deeply-toothed *leaves,* and larger *flowers.*

*** *Flowers regular. Stamens erect. Stigma undivided.*

5. E. *róseum,* Schreb. (*pale smooth-leaved Willow-herb*)*;* leaves ovato-lanceolate stalked finely toothed, stem erect somewhat 2-edged, stigma clavate. *Engl. Bot. t.* 693. *Engl. Fl. v. ii. p.* 215.

About London, in Essex and Sussex. Forfarshire, Scotland, *Mr. Drummond. Fl.* July. ♃.—This is distinguishable from *E. montanum* by its clavate entire *stigma,* and from *E. tetragonum* by its broader petiolate *leaves* and *stem* not distinctly 4-sided.

6. E. *tetragónum,* Linn. (*square-stalked Willow-herb*)*;* leaves lanceolate sessile denticulate, stem with 4 angles nearly glabrous, stigma undivided. *Engl. Bot. t.* 1948. *Hook. Scot. i. p.* 117. *Engl. Fl. v. ii. p.* 215.

Sides of ditches and watery places, common. *Fl.* July. ♃.

7. E. *palústre,* Linn. (*narrow-leaved Marsh Willow-herb*)*;* leaves narrow-lanceolate sessile nearly entire and as well as the rounded erect stem subglabrous, stigma undivided. *Engl. Bot. t.* 346. *Hook. Scot. i. p.* 117. *Engl. Fl. v. ii. p.* 216.

Boggy places and the sides of lakes and ditches. *Fl.* July, ♃.—About a foot high. *Flowers* small.

8. E. *alsinifólium,* Vill. (*Chickweed green-leaved Willow-herb*)*;* leaves lucid ovato-acuminate nearly sessile glabrous lowermost ones entire, the rest toothed, stem rounded, upper part and germen slightly pubescent, stigma entire. *Engl. Bot. t.* 2000. *Hook. Scot. i. p.* 117. *Engl. Fl. v. ii. p.* 216.

Sides of alpine rivulets. On the Cheviots, *Mr. Winch.*—Aber waterfall, N. Wales, *Mr. W. Wilson.* Frequent on the Scottish, especially the Highland mountains. *Fl.* July, ♃.—This has many of the characters, in its *leaves* and *stem,* of *E. montanum;* but the *stigma* is entire, clubbed, and the *leaves* have a flaccid, subpellucid appearance, so that the eye readily distinguishes the species. The *germen* is pubescent; but in my specimens the down disappears before the fruit is ripe. Wahlenberg considers it a variety of the following; and I must confess that I have gathered, on the mountains of Clova, specimens that seem intermediate. The more usual forms of the plant do indeed appear to be very different. Let it be observed, that in Wales, where *E. alsinifolium* is found, *E. alpinum* is never seen.

9. E. *alpínum,* Linn. (*alpine Willow-herb*)*;* leaves elliptical glabrous on short footstalks nearly entire, stem nearly glabrous and fruit entirely so, stigma undivided. *Engl. Bot. t.* 2001. *Hook. Scot. i. p.* 118. *Engl. Fl. v. ii. p.* 217.

Wet places near springs, and by the sides of rivulets on all the Highland mountains. *Fl.* July. ♃.—Two to 4 inches high. *Root* creeping. *Stem* angular, with two lines of very obscure pubescence, procumbent at the base. *Flowers* seldom more than 1 or 2 from the summit of the stalk, at first gracefully drooping, bright purple-red. *Fruit* erect, often as long as the plant.

** *Flowers incomplete.*

9. Dáphne. *Linn.* Mezereon and Spurge-Laurel.

Perianth single, inferior, resembling a *Corolla*, 4-fid. *Berry* with one *seed.*—*Nat. Ord.* Thymeleæ. *Juss.*—Named in allusion to the Nymph *Daphne,* who was changed into a *Laurel;* some of the plants of this Genus having the habit of Laurels.

1. D. *Mezéreum,* Linn. (*common Mezereon or Spurge-Laurel*); flowers subternate lateral sessile appearing before the deciduous lanceolate leaves, tube of the perianth hairy. *Engl. Bot. t.* 1381. *Engl. Fl. v. ii. p.* 228.

Rare, in woods in England; found in Hampshire, Suffolk, Staffordshire, Worcestershire, Berkshire, and Oxfordshire. *Fl.* March, ♄.—The well known *Mezereon* of the gardens, whose early blossoms and delightful fragrance have attracted general notice. It forms a bushy *shrub,* bearing its numerous purple *flowers* before the *leaves,* and the red *berries* nestled among the foliage. *Flowers* sometimes white.

2. D. *Lauréola,* Linn. (*Spurge-laurel*); racemes axillary of about 5 flowers, leaves lanceolate glabrous evergreen. *Engl. Bot. t.* 119. *Hook. Scot. i. p.* 119. *Engl. Fl. v. ii. p.* 229.

Woods, thickets and hedges throughout England, especially in a clay soil. Rare in Scotland; about Rosslyn and Bothwell. *Fl.* March, ♄.—*Stem* rather stout, erect, 1—3 feet high, but little branched, naked below, leafy above, and hence bearing some resemblance to a Palm. *Flowers* yellowish-green, each accompanied by an ovate, concave *bractea,* drooping. *Perianth* funnel-shaped, *limb* 4-cleft, pale yellowish-green. *Stam.* included, standing in two rows of 4 each; *filaments* very short. *Berry* ovate, bluish black.

(*See* Monotropa *in* Cl. X.)

(Digynia. 2 *Styles.*)

See Polygonum *in* Ord. TRIG. Chrysosplenium *and* Scleranthus *in* Cl. X.

ORD. II. TRIGYNIA. 3 *Styles.*

10. Polýgonum. *Linn.* Persicaria, Bistort, Knot-grass and Buckwheat.

Perianth single, in 5 deep, coloured, persistent segments, inferior. *Stam.* 5—8. *Styles* 2, 3. *Fruit* a one-seeded, compressed or trigonous *nut.*—*Nat. Ord.* Polygoneæ. *Juss.*—Name, from πολυς, *many,* and γονυ, a *knee* or *joint,* from the numerous joints of the stem.

* *Styles 3. Nut triquetrous.*

1. P. *Bistórta*, Linn. (*Bistort or Snakeweed*); stem simple bearing one spike, leaves ovate waved, the radical ones tapering into a footstalk. *Engl. Bot. t.* 509. *Hook. Scot. i. p.* 120. *Engl. Fl. v. ii. p.* 236.

Moist meadows in various parts of England, Scotland, and Ireland. *Fl.* June, ♃.—One to 1½ foot high. Upper *leaves* with long sheaths. *Spikes* cylindrical, dense. *Flowers* flesh-coloured, on short footstalks, with small bracteas at their base. *Stam.* 8. *Styles* 3. *Root* large, tortuose, very astringent.

H. 2. P. *vivíparum*, Linn. (*viviparous alpine Bistort*); stem simple bearing one spike, leaves linear-lanceolate, the lower ones elliptical petiolate, their margins revolute. *Engl. Bot. t.* 669. *Hook. Scot. i. p.* 120. *Engl. Fl. v. ii. p.* 237.

Mountain pastures in the north of England, and abundant on the Highland mountains of Scotland. *Fl.* June. ♃.—From 4—8 inches high, slender. *Spike* linear; lower part of it generally bearing little viviparous *bulbs* of a fine red colour. *Stam.* 8. *Styles* 3. *Perianth* pale flesh-coloured, almost white.—This species increases much by the bulbs, and little, if at all, by seed, its triquetrous germen proving abortive.

H. 3. P. *aviculáre*, Linn. (*knot-Grass*); flowers nearly solitary axillary, leaves elliptico-lanceolate, stipules much shorter than the leaves, nerves of the stipules distant, stem procumbent herbaceous.

α. Fruit included within the perianth striated with raised points. *P. aviculare, Linn. Engl. Bot. t.* 1252. *Hook. Scot. i. p.* 122. *Engl. Fl. v. ii. p.* 238.

β. Fruit longer than the perianth quite smooth on the surface. *P. maritimum, Ray. Syn. p.* 147?—*P. aviculare.* ε. *Engl. Fl. v. ii. p.* 238?

Waste places and way-sides, common.—β. Sea-coast near Dublin, *Dr. Taylor.* Cornish coast? *Ray. F. Boroni.* Isle of Arran, upon the sea-shore; and other places at the mouth of the Clyde. *Fl.* May—Sept. ⊙.—β. ♃.—Varying much in size. I feel almost persuaded that the Scottish maritime *Polygonum*, here mentioned, will prove a species distinct from the common *aviculare.* It covers a space of some feet with its long, straggling, procumbent *branches.* The *leaves* are an inch long, and the *bracteas* large and scariose. *Flowers* twice the size of α; and the *fruit* greatly larger, protruded and quite even on the surface: in these respects agreeing with the true *P. maritimum;* but that has woody *stems*, larger *stipules*, as long as the leaves, and the *joints* of the *stem* always much shorter than the *leaves.*

4. P. *Fagopýrum*, Linn. (*Buck-wheat*); leaves cordato-sagittate, stem nearly upright without prickles, angles of the fruit even. *Engl. Bot. t.* 1044. *Hook. Scot. i. p.* 122. *Engl. Fl. v. ii. p.* 239.

Dunghills and about cultivated land, but introduced by cultivation, it being an excellent food for poultry. *Fl.* July, Aug. ⊙.—*Stem* nearly erect, waved, 1 foot high, branched. *Flowers* in spreading panicles, terminal and lateral, pale reddish.

H. 5. P. *Convólvulus*, Linn. (*climbing Buck-wheat*); leaves cordato-sagittate, stem twining angular, segments of the perianth bluntly keeled. *Engl. Bot. t.* 941. *Hook. Scot. i. p.* 122. *Engl. Fl. v. ii. p.* 239.

Corn-fields, frequent. *Fl.* July, Aug. ⊙.—Very long, climbing. *Spikes* of four, whorled, greenish *flowers*, lateral and leafy.

** *Styles mostly 2. Nuts compressed.*

H. 6. P. *amphíbium*, Linn. (*amphibious Persicaria*); flowers pentandrous, styles forked, spike oblongo-ovate, leaves petiolate cordato-lanceolate rough at the margins. *Engl. Bot. t.* 436. *Hook. Scot. i. p.* 121. *Engl. Fl. v. ii. p.* 232.

α. *aquaticum*, leaves floating broadly lanceolate glabrous, spikes oblong.

β. *terrestre*, nearly erect, leaves narrow lanceolate rough with short rigid appressed hairs on both sides, spikes ovate.

Ponds, lakes, and ditches, on their margins, frequent. *Fl.* July, Aug. ♃.—*Stem* 2—3 feet long, scarcely branched when growing in the water. *Leaves* arising from long, tubular *sheaths* or *stipules*, glabrous in β., but hispid in α. *Spikes* mostly solitary, terminal, of a bright rose-colour. This is the only perennial species of the *Persicaria* groupe.

H. 7. P. *Persicária*, Linn. (*spotted Persicaria*); flowers hexandrous, styles forked, leaves lanceolate (often spotted), spikes oblong erect their peduncles smooth, stipules fringed. *Engl. Bot. t.* 756. *Hook. Scot. i. p.* 121. *Engl. Fl. v. ii. p.* 233.

Moist ground and waste places, frequent. *Fl.* Aug. ⊙.—*Stems* erect, branched, 1 foot to 2 feet high. *Spikes* terminal and lateral, dense, greenish, the tips of the *flowers* rose-coloured. *Leaves* nearly sessile, glabrous: but there are said to be varieties with hoary leaves.

H. 8. P. *lapathifólium*, Linn. (*pale-flowered Persicaria*); flowers hexandrous with 2 distinct styles, leaves ovato-lanceolate shortly petiolate, spikes oblong erect their peduncles rough, stipules not fringed. *Engl. Bot. t.* 1382. *Hook. Scot. i. p.* 121. *Engl. Fl. v. ii. p.* 234.

Fields and dunghills, frequent. *Fl.* Aug. ⊙.—One foot or 1 foot and a half high. A very variable species; but the above characters, so ably pointed out by Mr. Curtis, are constant. Sometimes the *stem* is spotted, and sometimes the *leaf* is hoary. The *flowers* are either pale green, almost white, or of a reddish tint. *Spikes* dense, terminal and lateral.

H. 9. P. *Hydrópiper*, Linn. (*biting Persicaria*); flowers hexandrous, styles forked, leaves lanceolate waved and spotless, spikes lax filiform drooping, stem erect. *Engl. Bot. t.* 989. *Hook. Scot. i. p.* 121. *Engl. Fl. v. ii. p.* 235.

Frequent by the sides of lakes and ditches. *Fl.* Aug. Sept. ⊙.—One foot to 3 feet high, erect. Remarkable for its slender, long, more or less drooping *spikes* of distant, reddish *flowers*; they are lateral and terminal.

10. P. *mínus*, Huds. (*small creeping Persicaria*); flowers hexandrous, style undivided, leaves linear-lanceolate plane very shortly petiolate, spikes slender erect, stem rooting at the base. *Engl. Bot. p.* 1043. *Hook. Scot. i. p.* 122. *Engl. Fl. v. ii. p.* 235.

On gravelly, watery commons; about London, and in Worcestershire. Moist fields round Forfar, *G. Don.* Near Cork, Ireland, *Mr. Drummond.* *Fl.* Sept. ⊙.—Nearly allied to *P. Hydropiper*, but much smaller, procumbent below, with upright *spikes*, narrower *leaves*, and undivided *stigmas.*

ORD. III. TETRAGYNIA. 4 *Styles.*

11. Páris. *Linn.* Herb Paris.

Cal. of 4 leaves. *Pet.* 4. *Cells* of the *Anthers* fixed one on each side the middle of a subulate *filament.* *Berry* 4-celled; each *cell* with several *seeds* in two rows.—*Nat. Ord.* Smilaceæ. *Br.*—Named, it is said, from *par, paris, equal,* on account of the regularity of its leaves and flowers.

H. 1. T. *quadrifólia,* Linn. (*common Herb Paris*); leaves ovate 4 in a whorl. *Engl. Bot. t.* 7. *Hook. Scot. i. p.* 122. *Engl. Fl. v. ii. p.* 241.

Moist and wet shady woods, in many parts of England and Scotland. Killarney, Ireland, ("*Smith's Kerry.*") *Fl.* May, June. ♃.—*Stem* 1 foot high, with 4, rarely 5, whorled, large, ovate, acute *leaves* at its summit, the rest leafless. *Flower* single, terminal, on a footstalk about 2 inches long. *Cal.* of 6, linear-lanceolate, green *leaflets; petals* similar to these, but narrower and more yellow. *Roots* purgative. *Berry* esteemed poisonous, but it has been employed in curing inflammation in the eyes.

12. Adóxa. *Linn.* Moschatell.

Cal. half inferior, 3-cleft. *Cor.* superior, 4—5-cleft. *Anther* terminal, 1-celled. *Berry* 4—5-celled. The side flowers have the corolla 5-cleft, the terminal one 4-cleft.—*Nat. Ord.* Saxifrageæ, *Juss.*—Name α, *without,* and δοξα, *glory;* from the humble and insignificant aspect of this little flower.

1. A. *moschatéllina,* Linn. (*tuberous Moschatell*); *Engl. Bot. t.* 463. *Hook. Scot. i. p.* 123. *Engl. Fl. v. ii. p.* 242.

Woods, hedgebanks and shady places; not unfrequent at a great elevation and even upon the tops of Highland mountains. *Fl.* April, May. ♃.—*Root* composed of tooth-like scales, creeping. *Stem* about a span high. *Leaves* 2—3, radical, on very long *footstalks,* triternate, lobed and cut, 2 cauline ones small and simply ternate. *Peduncle* single, terminal, with a head of 4, verticillate *flowers,* and a fifth terminal one. *Stamens* united in pairs, or they may be considered as 4—5 forked *stamens,* each ramification terminated by the single cell of an *anther,* and all springing from a fleshy ring that surrounds the upper part of the *germen.* The *flowers* have an evident musky smell in the evening, or early in the morning, while the dew is on them.

13. Elátine. *Linn.* Water-wort.

Cal. 3—4-partite, persistent, inferior. *Pet.* 3—4. *Stam.* 3—4? or 6—8. *Styles* 4 or 3, very short. *Caps.* 3—4-valved, 3—4-celled, many-seeded. *Seeds* cylindrical, furrowed and transversely striated, attached to a central free receptacle.—*Nat. Ord.* Cary-

OPHYLLEÆ. *Juss.*—Name said to be derived from ελατη, *a pine*, to which nothing can be less similar than our present plant.

1. E. *hexándra*, De Cand. (*small Water-wort*); leaves opposite rough with minute points spathulate, flowers alternate pedicellate hexandrous tripetalous. *De Cand. Pl. Gall. Rar. p.* 14. *t.* 43. *f.* 1. *Reichenb. Iconogr. Bot. t.* 413.—*E. tripetala, Sm. Engl. Fl. v. ii. p.* 243.—*E. Hydropiper, Engl. Bot. t.* 955. (not *Linn.*)

Margins of ponds and ditches, rare: Bomere pool, near Condover, Shropshire, *Rev. E. Williams;* near Binfield, Berks, *Mr. T. F. Forster. Fl.* July, Aug.—A minute, procumbent, much branching *plant*, with axillary solitary *flowers. Petals* rose-coloured. *Seeds* most beautifully ribbed and transversely striated.—Sir James E. Smith is quite right in removing this from the *E. Hydropiper* of Linn.; but it should have been referred to the *E. hexandra*, published more than 20 years ago by De Candolle. It may be the *E. triandra* of Hoffman; though our plant seems to have constantly 6 stamens.

2. E. hydropiper. Appen. 16.

CLASS IX. ENNEANDRIA. 9 *Stamens.*

I. HEXAGYNIA. 6 *Styles.*

1. BÚTOMUS. *Linn.* Flowering-rush.

Perianth single, coloured, 6-partite, inferior. *Capsules* 6, many-seeded. *Seeds* fixed to the inner lining of the capsule.—*Nat. Ord.* BUTOMEÆ. Rich.—Named from βους, *an ox*, and τεμνω, *to cut*, because the sharp leaves injure the mouths of cattle that browze upon them.

H. 1. B. *umbellátus*, Linn. (*common Flowering-rush*); leaves linear-subulate trigonous, spatha of 3 leaves. *Engl. Bot. t.* 651. *Hook. Scot. i. p.* 123. *Engl. Fl. v. ii. p.* 245.

Ditches and ponds, frequent in England and Ireland. Duddingston Loch, and Loch of Clunie, Scotland, where I believe it has been planted. *Fl.* June, July. ♃.—*Root* white, tuberous. *Leaves* all radical, 2—3 feet long, linear, acuminate, acutely trigonous, more or less spirally twisted at the extremity. *Scape* longer than the *leaves*, rounded. *Umbel* of many rose-coloured *flowers*, on pedicels about 4 inches long, with scariose sheathing *bracteas* at the base; and these having a triphyllous membranous *spatha* or involucre beneath them. *Germens* ovate, compressed. *Style* about as long as the *germen*, with a recurved, cleft *stigma*. *Seeds* parietal, or fixed to the inner surface of the pericarp, extremely small.—A highly ornamental plant.

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CLASS X. DECANDRIA. 10 *Stamens.*

ORD. 1. MONOGYNIA. 1 *Style.*

1. MONÓTROPA. Linn. *Bird's nest.*

Perianth single, of 4—5 leaves, cucullate at the base. *Anthers* 1-celled, 2-lipped. *Caps.* superior, 4—5-celled. *Seeds* numerous, invested with a long *arillus.*—*Nat. Ord.* MONOTROPEÆ. *Nutt.* —Named from μονος, *one*, and τρεπω, *to turn*, the flowers all pointing one way.

H. 1. M. *Hypópitys*, Linn. (*yellow Bird's-nest*); lateral flowers with 8, terminal one with 10 stamens. *Engl. Bot. t.* 713. *Hook. in Fl. Lond. N. S. t.* 105. *Hook. Scot. i. p.* 125. *Engl. Fl. v. ii. p.* 249.

Beech and Fir-woods, where the soil is dry; but not common either in England or Scotland. Counties of Dublin and Louth, Ireland; *Mr. J. T. Mackay. Fl.* June, July. ♃.—*Root* fibrous, parasitic? *Stem* stout, erect, 6—9 inches high, simple or slightly branched; instead of *leaves* having numerous ovate scattered *scales*, of the same dingy yellow colour as the stem. *Raceme* terminal, a continuation of the stem, at first drooping, then erect. *Flowers* on short scaly or bracteated pedicels, large, of the same colour as the rest of the plant. *Stamens* alternately smaller. *Germen* 4—5-lobed, ovate. *Stigma* large, peltate. *Seeds* very minute, rarely perfect, enveloped in a reticulated *arillus.*

2. PÝROLA. *Linn.* Winter-green.

Cal. 5-cleft. *Petals* 5, often connected at the base. *Anthers* opening with 2 pores. *Caps.* superior, 5-celled. *Seeds* numerous, invested with a long *arillus.*—*Nat. Ord.* MONOTROPEÆ. *Nutt.*—Name, from *Pyrus*, a *pear*, from a fancied resemblance in its leaves to those of a *Pear-tree.*

H. 1. P. *uniflóra*, Linn. (*single-flowered Winter-green*); stem bearing a solitary flower, leaves orbicular. *Engl. Bot. t.* 146. *Hook. Scot. i. p.* 127. *Engl. Fl. v. ii. p.* 258.

Woods in Scotland. Western isles of Harris and Bernera, *Mr. James Hoggan.* (*Sm.*) This is to me a new and unexpected station. Fir-wood near Brodie House, Forres; *James Brodie, Esq.* and *Mr. Hay.* —Woods at Scoune, *Mr. Bishop.*—Coul, Ross-shire; *Sir G. S. Mackenzie, Bart.*—In the Oakwood, Knock of Alva, near Elgin; *Provost M'Lawson. Fl.* July. ♃.—*Stem* scarcely any, bearing a few petiolated and obscurely serrated *leaves*, and a single *peduncle* with one large, nearly white, very fragrant *flower*. *Style* short, straight. *Stigma* large, with 8 erect rays.

H. 2. P. *secúnda*, Linn. (*serrated Winter-green*); flowers all leaning one way racemed, leaves ovate serrated. *Engl. Bot. t.* 307. *Hook. Scot. i. p.* 127. *Engl. Fl. v. ii. p.* 257.

Rare in England; Yorkshire, *Ray.* Not unfrequent in Fir-woods in Scotland, especially in the Highlands. *Fl.* July. ♃.—*Stems* rather straggling, branched. *Peduncles* 4—5 inches high, with several oval scales or *bracteas.* *Flowers* small, greenish-white. *Petals* erect. *Style* much protruded. *Stigma* 5-lobed.

H. 3. P. *rotundifólia*, Linn. (*round-leaved Winter-green*)*;* flowers drooping racemed, leaves obovato-rotundate slightly crenate, style bent down curved upwards at the extremity, much longer than the ascending stamens. *Engl. Bot. t.* 213. *Hook. Scot. i. p.* 127. *Engl. Fl. v. ii. p.* 255.

Moist woods and bushy places, rare. Bradwell, near Yarmouth, and Middleton in Suffolk: Yorkshire, and many places in Scotland are assigned as stations for this plant; but it is so often confounded with the two following species, that I cannot quote them with certainty. The Suffolk plant is assuredly the true one. *Fl.* July—Sept. ♃.—The largest of the *Pyrolæ,* with white, spreading *flowers,* well distinguished by the direction and relative length of its *stamens* and *style.* The latter is more than twice as long as the fully formed *capsule* and it is singularly curved. *Stigma* with 5 erect points.

H. 4. P. *média,* Swartz, (*intermediate Winter-green*)*;* leaves ovato-rotundate crenate, stamens erect much shorter than the straight or slightly decurved style, stigma with 5 erect points. See Errata

Woods, principally in the north of England; very general in Scotland, where it is often taken for *P. rotundifolia.* Oxfordshire? (*Sm.*) County of Antrim, &c. Ireland, *Mr. Templeton.* *Fl.* July, Aug. ♃.—*Style* protruded beyond the *flower,* but without any curvature towards its extremity.

H. 5. P. *mínor,* Linn. (*lesser Winter-green*)*;* leaves ovato-rotundate crenate, stamens erect as long as the very short straight style which is included within the flower, stigma large, with 5 divergent rays. *Engl. Bot. t.* 158. (not good). *Hook. in Fl. Lond. t.* 154. *Hook. Scot. i. p.* 128. *Engl. Fl. v. ii. p.* 257.—*P. rosea, Engl. Bot. t.* 2543.

Woods in the north of England and Scotland; most frequent in the Western Highlands and Hebrides. *Fl.* July. ♃.—This is smaller than the last, essentially distinguished from it, and at once characterized by the shortness of its *style* and large radiated *stigma,* quite included within the concave *corolla.*—The plant under this name in *Engl. Bot.* is a bad representation, while that given as *P. rosea* is a good one, of this species.

3. Lédum. *Linn.* Ledum.

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Cal. 5-toothed. *Petals* 5. *Anthers* with 2 pores. *Stigma* 5-lobed. *Caps.* 5-celled, 5-valved, dissepiments formed by the inflexed margins of the valves, opening from the base and between the dissepiments. *Seeds* arillate, fixed to a longitudinal parietal receptacle.—*Nat. Ord.* Ericeæ. *Juss.*—Named from the similarity of its foliage to that of the *Cistus Ledum.*

1. L. *palústre,* Linn. (*Marsh Ledum*)*;* leaves linear their margin revolute downy beneath, flowers decandrous. *Hook. in Fl. Lond. t.* 210. *Lindl. Syn. p.* 173.

At Achil-head on the north-west coast of Ireland. *Sir Chas. Giesecke. Fl.* July, Aug. ♄.—A small *shrub*, with rigid evergreen *leaves*, clothed while young, entirely, and afterwards, on the underside only, with rusty down. *Flowers* corymbose, white, spreading. *Stamens* prominent. *Capsules* pendent, opening from the base upwards into valves which remain attached to the upper extremity, as in *Triglochin.*—In Canada this plant is extensively used by the hunters in lieu of Tea.

4. Andrómeda. *Linn.* Andromeda.

Cal. deeply 5-cleft. *Cor.* ovate or campanulate. *Anthers* with awns. *Caps.* superior, 4—5-celled, the dissepiments from the middle of the valves.—*Nat. Ord.* Ericeæ. *Juss.*—Name given in allusion to the story of *Andromeda*[1], who was chained to a rock and exposed to the attack of a sea-monster: so does this beautiful tribe of plants grow in dreary and northern wastes, feigned to be the abode of præternatural beings.

H. 1. A. *pólifolia*, Linn. (*Marsh Andromeda*); leaves alternate lanceolate their margins revolute glaucous beneath, flowers on short terminal racemes. *Engl. Bot. t.* 713. *Hook. Scot. i. p.* 125. *Engl. Fl. v. ii. p.* 251.

Peat-bogs in the north of England, Lowlands of Scotland, and in Queen's county and county of Kerry, Ireland, *Mr. J. T. Mackay. Fl.* A small evergreen *shrub*, with beautiful oval or urceolate, rose-coloured drooping *flowers*, a good deal concealed among the terminal *leaves. Mr. Mackay* speaks of the broad leaved *var.* as growing in a bay between Newport and Castle-Connel.

5. Arbutus. *Linn.* Strawberry-tree. Bear-berry.

Cal. deeply 5-cleft. *Cor.* ovate. *Berry* superior, 5-celled, many-seeded.—*Nat. Ord.* Ericeæ. *Juss.*—Name, according to Théis, from *ar*, *rough* or *austere*, and *boise*, a *bush*, in Celtic. The Arbutus is the badge of the Highland Clan *Ross.*

1. A. *Unédo*, Linn. (*Strawberry tree*); stem arboreous, leaves elliptic-lanceolate serrated, panicles terminal, berries tubercled. *Engl. Bot. t.* 2377. *Engl. Fl. v. ii. p.* 252.

About the Lakes of Killarney, in woods at Mucruss and at Glengariff near Bantry, Ireland. *Fl.* Sept. Oct.—The fruit ripens the following summer. ♄.—This beautiful evergreen is said to be truly wild in the south of Ireland; though some are of opinion that it has been introduced by the Monks of Mucruss Abbey. The young *leaves* are clothed with glandular hair The *flowers* are large, pale-greenish white. The *fruit* red, ungrateful; and hence, it is reported, arises the specific name, *Unedo*, because those who had eaten one would not care to eat more. Mr. Mackay measured a tree at Rough Island, opposite O'Sullivan's Cascade, which was 9½ feet in circumference at a foot from the ground, in the year 1805. It is a tree which, from its frequency and the beauty of its foliage, adds greatly to the charms of the Lake scenery of Killarney and contributes to give it a preference over the Scottish Lakes.

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[1] Those who have not the opportunity of referring to the *Flora Lapponica* of Linnæus will, with pleasure, see the following extract, describing in that author's accustomed agreeable manner, his reasons for calling this plant *Andromeda.* "Virgo hæc lectissima pulcherrimaque collo superbit alto et vividissimo (*pedunculus*) cujus facies roseis suis labellis (*corolla*) vel optimum veneris fucum longe superat; juncea hæc in genua projecta pedibus alligata (*caulis inferior incumbens*), aqua vernali cincta, rupi (*monticulo*) adfixa, horridis Draconibus (*amphibiis*) exposita, terram versus inclinat mœstam faciem (*florem*), innocentissimaque brachia (*ramos*) cœlum versus erigit, meliori sede fatoque dignissima, donec gratissimus Perseus (*æstas*) monstris devictis, eam ex aqua eduxit e virgine factam fæcundam matrem, quæ tum faciem (*fructum*) erectam extollit. Si Ovidio fabulam de Andromeda conscribenti hæc ante oculos posita fuisset planta, vix melius quadrarent attributa, qui more poetico ex humili tumulo produxisset Olympum." *Fl. Lapp. ed.* 1737. *p.* 126.

2. A. *alpína*, Linn. (*black Bear-berry*); stem procumbent, leaves wrinkled serrated, racemes terminal. *Engl. Bot. t.* 2030. *Hook. Scot. i. p.* 126. *Engl. Fl. v. ii. p.* 253.

Dry barren grounds on many of the Highland mountains; Ben Nevis, near the little Lake, and more frequent in the northern mountains: frequent in Sutherland. Hoy hill, Orkney. *Fl.* May. ♄.—A trailing *shrub*, with obovate, marcescènt *leaves* which taper down into a footstalk, and become, in autumn, of a fine red colour. There are a few hairs on the leaf-stalks, and ciliated *bracteas* at the base of the flower-stalks. *Corollas* urceolate, very pale rose-coloured, almost white. *Berry* black.

3. A. *Uva Ursi*, Linn. (*red Bear-berry*); stems procumbent, leaves obovate entire evergreen, racemes terminal. *Engl. Bot. t.* 714. *Hook. Scot. i. p.* 126. *Engl. Fl. v. ii. p.* 253.

North of England and Ireland; especially abundant in the Highlands and Western Isles of Scotland, growing in dry heathy and rocky places, *Fl.* May. ♃.—*Stems* very long and trailing; *leaves* obovate, stiff, rigid, glabrous, their margins revolute. *Flowers* in small crowded racemes, terminal, of a beautiful rose-colour. *Berry* small, red, austere, mealy; but yielding excellent food for the Moor-fowl.

(*See* Menziesia *and* Vaccinium *in* Cl. VIII.)

ORD. II. DIGYNIA. 2 *Styles.*

6. Scleránthus. *Linn.* Knawel.

Cal. of 1 piece, 5-cleft. *Cor.* 0. *Stam.* inserted upon the *cal.* 5 frequently abortive or wanting. *Capsule* 1-seeded, covered by the calyx.—*Nat. Ord.* Sclerantheæ. Link, (allied to Chenopodeæ. *Br.* Paronychiæ. *De Cand.*)—Name, from σϰληϱος, *hard*, and ανθος, a *flower*, from the indurated nature of the floral covering.

1. S. *ánnuus*, Linn. (*annual Knawel*); calyx of the fruit with erecto-patent rather acute segments, stems spreading, root annual. *Engl. Bot. t.* 351. *Hook. Scot. i. p.* 133. *Engl. Fl. v. ii. p.* 282.

Corn-fields, frequent. *Fl.* July. ♃.—*Stems* many, much branched in a dichotomous manner, slender, subpubescent, straggling. *Leaves* linear-subulate, keeled, opposite and combined at the base by a membranous fringed margin. *Flowers* green, inconspicuous, in axillary, leafy clusters. *Cal.* urceolate, ribbed, with 5 ovato-lanceolate teeth, in my specimen white and membranous at the edge as in the following, spreading when in flower, almost erect when in fruit, as represented in *Engl. Bot. t.* 351. left hand figure. The accurate Mr. Wilson finds Smith's character taken from the calyx in *S. perennis* applicable to the *S. annuus.*

H. 2. S. *perénnis*, Linn. (*perennial Knawel*); calyx of the fruit with obtuse closed segments edged with a broad white membrane, stems procumbent, root perennial. *Engl. Bot. t.* 352. *Hook. Scot. i. p.* 133. *Engl. Fl. v. ii. p.* 283.—*S. polycarpos, Lightf. Scot. p.* 1134?

Open dry sandy fields, in Norfolk and Suffolk. Eskdale? (*Lightf.*); and near Forfar, *G. Don. Fl.* Aug.—Oct. ♃.

I had expressed an opinion in the *Flora Scotica*, that this might be a state of *S. annuus*, become, under favourable circumstances, perennial; but Sir James Smith says that the two species are "clearly distinct." I do not find the characters to be so decided as laid down by authors.

7. Chrysosplénium. *Linn.* Golden-saxifrage.

Cal. 4—5 cleft, somewhat coloured, superior. *Cor.* 0. *Capsule* with two beaks, many-seeded.—*Nat. Ord.* Saxifrageæ. *Juss.*—Name, from χρυσος, *gold*, and σπλην, the *spleen*, a disease for which this plant was supposed to be a cure.

H. 1. C. *alternifólium*, Linn. (*alternate-leaved Golden-saxifrage*); leaves alternate, lower ones subreniform upon very long footstalks. *Engl. Bot. t.* 54. *Hook. Scot. i. p.* 128. *Engl. Fl. v. ii. p.* 260.

Boggy places among rocks and springs; Cheshire, rare, *Mr. W. Wilson.* Norfolk: more frequent in Scotland. Rosslyn Woods, Bilston burn, and St. Bernard's well, Edinburgh: Castlemilk glen, and Beetle's burn, vale of Clyde. Near Belfast, Ireland, *Mr. Templeton. Fl.* March. Apr. ♃.—Four to 5 inches high, branched near the summit. *Leaves* petiolate, crenate. *Flowers* in small *umbels*, deep yellow, mostly with 8 *stamens.*

H. 2. C. *oppositifólium*, (*common Golden-saxifrage*); leaves opposite cordato-rotundate. *Engl. Bot. t.* 490. *Hook. Scot. i. p.* 128. *Engl. Fl. v. ii. p.* 260.

Sides of rivulets in shady places, common. Abundant near the sources of rivulets in very alpine situations, in the Highlands. *Fl.* May—July. ♃.—Generally more branched at the base than the last, of a paler colour in all its parts. *Stamens* usually 8.

8. Saxífraga. *Linn.* Saxifrage.

Cal. superior or inferior or ½ inferior, in 5 segments. *Cor.* of 5 petals. *Caps.* with 2 beaks, 2-celled, many-seeded, opening between the beaks. *Seeds* upon a receptacle attached to the dissepiment.—*Nat. Ord.* Saxifrageæ. *Juss.*—Named from *saxum*, a *stone*, and *frango*, to *break;* in allusion to the supposed medicinal virtues of this plant; or, perhaps, to its roots penetrating the crevices of rocks and stones, among which the different species generally grow.

From a few, comparatively speaking, well defined individuals, 14 in number, given in *Flora Britannica*, the number of British species of *Saxifrage* is now increased to 24; and many of them, as in the Willows and Roses and Brambles, are marked by characters so obscure, or so liable to vary, that in the *hypnoides* family especially, we will venture to say no two Botanists are agreed as to what is and what is not a *species*. After a careful revision of the British ones, I am still of opinion that the view I have taken of that groupe as stated in *Flora Scotica*, is not far from the truth. In describing, however, those of England and Ireland, as well as Scotland, it behoves me to speak with great caution, since there are many of them that I have not seen in a living state; and it is a painful and an invidious task, to reduce the number of species established by Botanists of unquestionable authority, and who have had equal, or greater advantages with myself, in studying the genus. At my request Mr. Wm. Wilson has paid particular attention to the Welsh species, both upon their native mountains, and as cultivated in his garden; and it is gratifying to me to find, in general, how entirely his opinion coincides with mine. His observations I shall here introduce, at least such as I consider essential to the subject, and I am much mistaken if they will not contribute greatly to a more correct knowledge of this difficult genus. Mr. D. Don has well arranged all the species, both foreign and British, that were known to him, in a valuable Memoir in the *Linn. Trans. v. xiii. p.* 341. and his arrangement is here adopted, with Sir James Smith's slight alterations.

* *Cal. reflexed, inferior. Leaves undivided. Scape panicled, erect, much taller than the stems.*[1]

H. 1. S. *Géum*, Linn. (*kidney-shaped Saxifrage*); leaves rotundato-reniform acutely crenate more or less hairy, footstalks linear channelled, scape panicled, capsules superior. *Engl. Fl. p.* 261. *D. Don, Tr. of Linn. Soc. v. xiii. p.* 249.

α. leaves hairy on both sides, their under surface beautifully reticulated with purple, *Mackay*.

β. leaves glabrous on both sides, more sharply toothed, *Mackay*. S. *Geum, Engl. Bot. t.* 1561. (*leaves smaller than usual*). *Robertsonia dentata, Haworth in App. Syn. Pl. Succ.*

γ. leaves light green glabrous and shining sharply toothed, *Mackay*. *Robertsonia polita, Haworth, l. c.*

δ. leaves orbicular dark green glabrous on both sides, footstalks short, *Mackay*. *S. elegans, Mackay MSS.*—Flowers spotted with red.

ε. leaves hairy on both sides smaller than in any of the preceding, flowers cream-coloured spotless, scape slender, *Mackay*. *S. gracilis, Mackay MSS.*

Mountains in the south of Ireland.—α. Sheltered spot below Turk waterfall, Killarney, and only there.—β. The most common var. near Dingle, Mangerton, near Killarney and mountains of Cork.—γ. Conner cliff, near Dingle.—δ. Summits of Turk mountain, Killarney.—ε. Conner hill, near Dingle.—All found by *Mr. J. T. Mackay. Fl.* June. ♃.—This species has the margin of the teeth cartilaginous, but less so than the two following.

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[1] For our knowledge of the individuals and varieties of this little and very distinct groupe, which is almost exclusively of Irish origin, we are indebted to J. T. Mackay, Esq, who has given their characters and very particular stations in his useful *Catalogue of Plants found in Ireland*, (Dublin, 1825,) from which I have profited.

2. S. *hirsúta*, Linn. (*hairy oval-leaved Saxifrage*); leaves more or less cordate at the base slightly hairy, footstalks linear, scape panicled, capsule superior. *Engl. Bot. t.* 2322. *D. Don, in Tr. of Linn. Soc. v. xiii. p.* 251. *Engl. Fl. v. ii. p.* 262.

Gap of Dunloe, near Killarney, *Mr. J. T. Mackay. Fl.* June. ♃.—Readily distinguished, Mr. Mackay observes, from *S. Geum*, by its oval leaves, which are of a deep green colour. But my friend the Rev. W. T. Bree, who has cultivated and studied the *Saxifrages* very assiduously, says that it is certainly a hybrid between the preceding and the following. Mr. Don notices a roundish-cordate leaved variety, which I should think can hardly be any thing but the *S. Geum*.

H. 3. S. *umbrósa*, Linn. (*London-pride Saxifrage* or *None-so-pretty*); leaves obovate with sharp cartilaginous teeth tapering gradually into a broad footstalk, panicle small, capsule superior. *Engl. Bot. t.* 663. *D. Don, in Tr. of Linn. Soc. v. xiii. p.* 252. *Hook. Scot. i. p.* 129. *Engl. Fl. v. ii. p.* 263.

β. leaves roundish with sharp tooth-like serratures, fruitstalks elongated, *Mackay. S. punctata, Haworth.* (not *Sm.*)

γ. leaves oblongo-ovate glabrous light green with deep acute serratures, *Mackay. Robertsonia serrata, Haworth.*

Plentiful on mountains in the south of Ireland, as at Glengariff and Conner cliffs, near Dingle, *Mr. J. T. Mackay.*—β. Summit of Magillycuddy's reeks. Mountains of Cunnamara; of Sligo. (*Ray.*) On Crough Patrick in Mayo, (*A. B. Lambert, Esq.*) and Muckish, in Donegal, *Mr. Templeton*, on both which lofty mountains I have gathered the plant abundantly.—γ. Gap of Dunloe, near Killarney, *Mr. J. T. Mackay.*—This species is found too in woods at Wetherby and in Craven, Yorkshire, and about Edinburgh and Glasgow, but in situations so different from its Irish habitat, that I can hardly consider the stations wild. *Fl.* June. ♃.—This is well known in our gardens, even in the midst of the smoke of London; hence, and in consequence of its beautifully spotted flower, it is called *London-pride;* in Ireland, *St. Patrick's Cabbage*.

H. 4. S. *stelláris*, Linn. (*starry Saxifrage*); leaves oblongo-cuneiform angulato-serrate scarcely petiolate, panicle subcorymbose of few flowers, capsule superior. *Engl. Bot. t.* 167. *Hook. Scot. i. p.* 128. *D. Don, in Tr. of Linn. Soc. v. xiii. p.* 356. *Engl. Fl. v. ii. p.* 265.

β. leaves quite entire.

Sides of rivulets and wet rocks, in the mountainous parts of the north of England, Scotland and Ireland. β. Rocks on Ben Nevis, *Mr. S. Murray. Fl.* June—Aug. ♃.—*Stems* short, growing frequently in tufts. *Leaves* with coarse teeth; in β. quite entire, and thence having so different an aspect that, at first sight, Mr. Murray as well as myself considered it to be quite a distinct species. It has now, too, been cultivated for several years, and offsets have been taken from it, all of which preserve their original character. It was found only in one spot; and, there, a single tuft was growing by itself. As in α, the whole plant is slightly hairy. *Scapes* 2—5 or 6 inches high, with a minute *bractea* at each ramification of its small *panicle*. *Flowers* white; with 2 yellow spots at the base of each, somewhat clawed, *petal*.

** *Calyx spreading, half-superior. Leaves all radical, undivided. Scape upright; with a panicle or head of flowers.*

5. S. *nivális*, Linn. (*clustered alpine Saxifrage*); leaves obovate subpetiolate acutely crenate subcoriaceous, scape (rarely branched) terminated by a dense cluster of flowers, capsule half inferior. *Engl. Bot. t.* 440. *Hook. Scot. i. p.* 129. *D. Don in Tr. of Linn. Soc. v. xiii. p.* 387. *Engl. Fl. v. ii. p.* 263.

Mountains of Wales, and, not unfrequently in the rocky clefts of the Highland mountains of Scotland; particularly abundant on the Breadalbane range. *Fl.* Aug. ♃.—Allied as this species appears at first sight to *S. stellaris*, there are many and important distinctions. It is a thicker and stouter looking plant, though nearly of the same height. *Leaves* subcoriaceous, glabrous above. *Scape* glanduloso-pubescent, sometimes a little branched. In specimens from Snowdon, where, however, the species is rare, Mr. W. Wilson finds an individual with a long branch from above the middle, and another with the branch from near the base. *Flowers* clustered. *Cal. teeth* almost erect, never reflexed.

*** *Calyx partly or entirely inferior. Stem leafy. Leaves undivided.*

H. 6. S. *oppósitifolia*, Linn. (*purple Mountain Saxifrage*); leaves ovate opposite imbricated ciliated, flowers solitary terminal. *Engl. Bot. t.* 9. *Hook. Scot. i. p.* 129. *D. Don in Tr. of Linn. Soc. v. xiii. p.* 400. *Engl. Fl. v. ii. p.* 266.

Moist alpine rocks. Ingleborough, Yorkshire; *Dr. Richardson*. Snowdon, *Mr. Llwyd*. Welsh mountains, *Mr. W. Wilson*.—Frequent on the Highland mountains of Scotland. *Fl.* May, June. ♃.—Grows in straggling tufts, with a habit quite different from that of any other British Saxifrage. *Flowers* large in proportion to the size of the plant, purple, very beautiful. The *leaves* are retuse, ciliated, and have a pore at the extremity. *Capsule* half inferior.

H. 7. S. *Hírculus*, Linn. (*yellow Marsh Saxifrage*); stem erect, leaves alternate lanceolate, those from the root attenuated into a petiole, calyx inferior at length reflexed obtuse downy at the margin as well the upper part of the stem. *Engl. Bot. t.* 1009. *D. Don in Tr. of Linn. Soc. v. xiii. p.* 372. *Engl. Fl. v. ii. p.* 267.

Wet moors, very rare. Knutsford, Cheshire; *Dr. Kingstone*.—Cotherstone fell, Yorkshire; *Mr. John Binks*. *Fl.* Aug. ♃.—This again, like the preceding, is very different from any other British species, though approaching in some particulars to the following. *Flowers* yellow, large, solitary. *Petals* almost elliptical. It is singular that this plant, which I have seen abundantly in Iceland, and which was found so plentifully by our *arctic* American voyagers and travellers, is found in Britain, no further north than Yorkshire.

H. 8. S. *aizoídes*, Linn. (*yellow Mountain Saxifrage*); lower leaves of the stem numerous crowded, the rest scattered linear-lanceolate fleshy more or less ciliated, stem branched ascending, calyx spreading, capsule half superior. *Engl. Bot. t.* 39. *Hook. Scot. i. p.* 129. *D. Don in Tr. of Linn. Soc. v. xiii. p.* 375.

Abundant near alpine rills and in springy places, in mountainous countries; north of England, Wales, Scotland, and Ireland. *Fl.* July—Sept. ♃.—Five to 7 inches high, branching below. *Flowers* panicled, subcorymbose, bright yellow; each *petal* beautifully spotted with orange.

**** *Calyx spreading. Leaves more or less lobed. Flowering-stems erect, more or less leafy.*

H. 9. S. *granuláta*, Linn. (*white Meadow Saxifrage*); radical leaves reniform on long footstalks obtusely lobed, those of the upper part of the stem nearly sessile acutely lobed, stem panicled, root granulated. *Engl. Bot. t.* 500. *Hook. Scot. i. p.* 129. *D. Don in Tr. of Linn. Soc. v. xiii. p.* 362. *Engl. Fl. v. ii. p.* 269.

Hedge-banks, meadows and pastures, especially on a gravelly soil; yet very local. In many parts of the south of Scotland; but scarcely known in the Highlands. Between Beldoye and Port-marnock, Ireland; *Mr. J. T. Mackay*. *Fl.* May, June. ♃.—*Root* consisting of numerous, small, clustered *tubers*. *Stem* 8—12 inches high, glanduloso-pilose. *Leaves* mostly radical, glabrous; *petioles* glandular. *Flowers* large, white. *Germen* and *capsule* half inferior.

10. S. *cérnua*, Linn. (*drooping bulbous Saxifrage*); radical leaves reniform on long footstalks palmato-lobate superior ones nearly sessile subtrifid, stem simple bulbiferous with one terminal flower. *Engl. Bot. t.* 664. *Hook. Scot. i. p.* 130. *D. Don in Tr. of Linn. Soc. v. xiii. p.* 364. *Engl. Fl. v. ii. p.* 276.

Dry rocks (not about rills) on the highest of the Breadalbane mountains; summit of Ben Lawers, discovered by *Mr. Townson*, and on Craigalleach. *Fl.* June—Aug. ♃.—From 3—4 or 5 inches high, slender. *Leaves* glabrous, and the *stem*, which droops at the extremity, nearly so. In the axils of the small upper *leaves*, instead of flowers are clusters of minute reddish *bulbs*. Frequently there is no *flower*, and I have never seen more than one upon a stem, which is terminal, large in proportion to the size of the plant, and white; *petals* retuse. In the *Engl. Bot.* figure, the *root-leaves* are much less deeply-lobed than in my specimens.

11. S. *riviláris*, Linn. (*alpine Brook Saxifrage*); leaves 3—5-lobed palmated glabrous on long stalks, stem slender branched pubescent, branches few-flowered, bracteas oblong sessile 3-lobed and entire, capsule half inferior. *Engl. Bot. t.* 2275. *Hook. Scot. i.*

p. 130. *D. Don in Tr. of Linn. Soc. v. xiii. p.* 367. *Engl. Fl. v. ii. p.* 271.

Moist alpine rocks in Scotland; rare. Near the summit of Ben Nevis, *Mr. Townson,* but very sparingly, as it is likewise on Ben Lawers. Plentiful on Loch-na-gar, in Forfarshire, *Mr. Drummond;* Loch Rannoch, *Mr. Sommerville. Fl.* Aug. Sept. ♃.

12. S. *tridactylítes,* Linn. (*rue-leaved Saxifrage*); glandular and viscid, leaves cuneate 3—5 fid, the uppermost or bracteas undivided, stem panicled, pedicels single-flowered, capsule inferior. *Engl. Bot. t.* 501. *Hook. Scot. i. p.* 130. *D. Don in Tr. of Linn. Soc. v. xiii. p.* 441. *Engl. Fl. v. ii. p.* 271.

Common on walls and dry barren ground, in England and the Lowlands of Scotland; rare however in the west of Scotland, and especially in the Highlands. Island of Lismore, *Rev. Colin Smyth. Fl.* May, June. ⊙.—Two to four inches high. Whole plant covered with viscid *hairs. Petals* small, pure white, scarcely longer than the *segments* of the *calyx. Capsule* almost wholly inferior.

13. S. *muscoídes,* Wulf. (*mossy alpine Saxifrage*); radical leaves crowded linear obtuse entire and trifid, stem nearly naked few-flowered, petals oblong obtuse (buff-coloured), a little longer than the superior calyx.

α. leaves entire and trifid.—*S. muscoides, D. Don in Tr. of Linn. Soc. v. xiii. p.* 437.—α. *Sternb. Saxifr. p.* 39. *t.* 11. *f.* 2. *Engl. Fl. v. ii. p.* 272. γ. *Sternb. Saxifr. p.* 40. *t.* 11. *b. f. i.*—*S. cæspitosa, Huds. not Linn.*—*S. moschata, With.*

β. leaves mostly entire or retuse.—*S. muscoides, Hook. Scot. i. p.* 130. *S. moschata, Engl. Bot. t.* 2314.—γ. *Sternb. Saxifr. p.* 41. *t.* 11. *b. f.* 2. —*S. pygmæa, Haw. Misc. Nat.* 168. *D. Don in Tr. of Linn. Soc. v. xiii. p.* 439. *Engl. Fl. v. ii. p.* 273.

α. Mountains above Ambleside, Westmoreland. *Huds.* (*D. Don.*) β. Highlands of Scotland (?) *Mr. James Donn. Fl.* May. ♃.—The English *Bot. S. moschata* I referred to the entire-leaved state of *S. muscoides* of *Wulff.* in my *Fl. Scotica.* Now the state, with frequently 3 lobes to the leaves, is introduced as English upon the authority of Mr. Hudson. British specimens of it I have never seen, but Mr. Don refers to *Sternberg's t.* 11. *f.* 2, *and t.* 11. *b. f. i. and f.* 2, for the two plants. These figures appear to me evidently to belong to the same species; and I possess all the states in specimens which I have gathered abundantly in Switzerland and Savoy.

14. S. *cæspitósa,* Linn. (*tufted alpine Saxifrage*); "radical leaves crowded 3—5-cleft obtuse veiny fringed, lowermost undivided, flowers from one to 5 or more, germen half inferior hairy, calyx smoother obtuse, petals rounded triple-ribbed." (*Sm.*)

α. smaller. *Engl. Fl. v. ii. p.* 273.—*S. cæspitosa, Linn.*—*Engl. Bot. t.* 794. *D. Don in Tr. of Linn. Soc. v. xiii. p.* 428.—*S. grœnlandica, Gunn, Norv. v. ii. p.* 80. *t.* 7. *f.* 1.

β. larger. *Engl. Fl. v. ii. p.* 274.—*S. decipiens, Ehrh.*—*Sternb. Saxifr. p.* 55. *t.* 23.—*S. palmata, Engl. Bot. t.* 455.

Mountains of Wales and Ireland.—α. Rocks of Twll dû, and Cwm

Idwell, N. Wales; *Mr. Griffith.* Brandon mountains, Kerry, Ireland; *Mr. J. T. Mackay.*—β. Cwm Idwell, *Mr. Griffith.* On the Galty mountains, Tipperary; *Mr. J. T. Mackay.*—I had considered the two plants above alluded to as the same with the following species of our Scottish mountains, only having shorter and less stoloniferous *stems.* Sir James E. Smith however describes them as peculiar to the Welsh and Irish Mountains, and Mr. W. Wilson too is of opinion that the species is distinct. The *var.* α. is, he says, very scarce upon Twll dû, and he has not been able to find more than 2 roots of it. "But," he says, "a root of a *Saxifrage* which had hitherto been considered as *S. palmata*, I find, on examination, to answer very exactly to *S. cæspitosa*, β. of *Engl. Fl.* and agreeing also with what is there said of the cultivated plant from the Brandon Mountains. The Snowdon plant has acquired, by culture, rather long, procumbent shoots, the *leaves* of which are all 3-lobed, unless just below the flowering stems; the *lobes* obtuse, short and often very broad, not spathulate, copiously fringed with jointed hairs of various lengths, the short ones often glandular. It is true that, in this case, the lobes of the leaves are not rounded at the extremity, as in the wild specimens from Twll dû; and though they are always much more obtuse than in the cultivated varieties of *S. hypnoides*, hereafter enumerated, they are sometimes terminated by a point; but it will be seen that the point is not cartilaginous, as in *S. hypnoides*, but only a terminal, jointed, glandular hair, in every respect similar to those found in the margins of the lobes. The ribs of the leaf also appear rather different; the broad common base of the lobes having 5 ribs, instead of 3, uniting much lower down the footstalk than is common to *S. hypnoides;* thus the middle lobe is 3-ribbed at the base, and the lateral lobes 2-ribbed, and sometimes 3-ribbed; all of them furnished with lateral veins above. The *radical leaves* are usually 5-lobed. The *petals*, notwithstanding their size, are obovate and 3-ribbed; never furnished with lateral veins, as in many of the wild and most of the cultivated states of *hypnoides.* The *germen* in this, as well as in the wild plant from Twll dû, is remarkable for its broad, rounded base, which, with the very broad and obtuse segments of the calyx and leaves, fully establishes, as I think, the relationship between the cultivated Snowdon plant and the wild one from Twll dû, and will keep both, from all the varieties, wild or cultivated, of *S. hypnoides*, essentially distinct; though assuredly very *nearly connected.*"

In regard to *S. hirta*, Sm. Mr. Wilson remarks that he has never found in Wales a *Saxifrage* sufficiently hairy to justify the name, or, in that respect, at all approaching to *S. cæspitosa.* When it acquires rounded petals and the ribs are furnished with lateral veins, it becomes *S. platypetala.* When the segments of the leaves are narrow and widely spreading, it then passes for *S. leptophylla.* Indeed, after a careful examination of a great number of specimens from Wales, and of plants in a cultivated state, Mr. Wilson has come to the conclusion, that *S. hirta, platypetala, leptophylla*, and *hypnoides*, are varieties of one species; and moreover," he adds, "*so intimately connected by intermediate states, that it is hardly practicable to define their limits, even as varieties.*"—In this, as may be supposed, from what I have stated in *Flora Scotica*, I do most cordially concur; and I here follow Mr. Wilson's arrangement and characters drawn up from the living plants.

15. S. *hypnoídes*, Linn. (*mossy Saxifrage*); "radical leaves 3 or

5-cleft, those of the procumbent shoot undivided or 3-cleft all bristle-pointed and more or less fringed, segments of the calyx ovate pointed, petals roundish obovate or oblong 3-ribbed with or without lateral veins." *Wils. MSS.*

α. leaves of the trailing shoots undivided, sometimes with axillary buds. *S. hypnoides, Linn.—Engl. Bot. t.* 454. *Hook. Scot. i. p.* 131. *D. Don in Tr. of Linn. Soc. v. xiii. p.* 147. *Engl. Fl. v. ii. p.* 277.—*S. condensata, D. Don in Tr. of Linn. Soc. v. xiii. p.* 448.

Frequent in mountainous situations, among rocks; especially in limestone countries. *Fl.* May—July. ♃.—*Leaves* sometimes with axillary buds. *Stem* bearing from 3—7, usually erect, sometimes drooping *flowers*. *Petals* elliptical, entire, 3-ribbed; sometimes as broad as those of *S. platypetala*, and like them furnished with lateral veins; sometimes very narrow, notched or pointed. The persistent *shoots* in this *variety* are sometimes very short and sometimes destitute of axillary buds, which appear to be neither a constant character nor confined to this *variety*. A root exactly answering to *S. hypnoides, Engl. Fl.*, from Dove Dale in Derbyshire, is not altered by culture; except that the axillary buds on its shoots are not so numerous as in wild specimens, from the same place. *Wils.*

β, leaves of the procumbent shoots either undivided or 3-cleft, petals usually broad with or without lateral veins. *Wils. MSS.—Hook. Scot. i. p.* 131.—*S. platypetala, Engl. Bot. t.* 2276. *D. Don in Tr. of Linn. Soc. v. xiii. p.* 422.—*S. hirta, Donn.—Engl. Bot. p.* 2291. *D. Don in Tr. of Linn. Soc. v. xiii. p.* 421. *Engl. Fl. v. ii. p.* 275.

Mountains of Wales, Scotland and Ireland; frequently with the former. *Fl.* May—July. ♃.—This is closely connected with the preceding and following *vars.*, and perhaps should not be kept separate from γ.—*Flowers*, in some instances, drooping, generally erect. *Calyx-segments* sometimes narrow. *Petals* variable, as in the last.

γ. *Leaves* of the procumbent shoots nearly 3-cleft, the lobes usually broad, the middle are 3-ribbed at the base. *Wils. MSS.*—Again to this, *Mr. Wilson* refers certain states of *S. platypetala* and *S. hirta, Engl. Fl.*, and further remarks: "the common base of the lobes usually very broad and tapering downwards into the more or less elongated footstalk. *Flowering stem* 3—12 inches high, the *flowers*, in some instances, few and crowded, upon short branches near the top; sometimes there are 7 or 9 flowers; the branches axillary and often placed at distant intervals along the stem. *Cal. segments* variable in length and breadth. *Petals* variable, as in the foregoing; occasionally very long and narrow, with a notched extremity. The procumbent shoots are frequently furnished with axillary buds. By cultivation, the leaves, in autumn, become very large and 5-lobed, the lobes spreading and in some degree spathulate. A root, exactly similar to *S. platypetala, Engl. Fl.*, brought from Wales, was found not materially changed by culture while in a flowering state; but in the autumn following the leaves of the shoots were almost universally five-parted, and the lobes broadly spathulate."

δ. leaves of the procumbent shoot deeply 3-cleft, lobes linear-lanceolate and widely spreading. *Wils. MSS.—S. leptophylla, Pers.—D. Don in Tr. of Linn. Soc. v.* 13. *p.* 450. *Engl. Fl. v.* 2. *p.* 279.

Welsh mountains, *Mr. Macnab.*—In this the *calyx-segments* vary much in breadth and length. *Petals* obovate or elliptical, 3-ribbed, seldom furnished with lateral veins. Intermediate states occur, in which the stem-leaves have narrow, wide-spreading lobes, while those of the procumbent shoots are undivided, as in the *var.* α.

ε. flowering-stem terminating the procumbent shoots. *Wils. MSS.*

Welsh mountains, *Mr. W. Wilson.*—"This can scarcely be termed a *var.*; yet it is not readily altered by culture, though perhaps its habit may not be strictly permanent. Except in having its flowering-stem at the ends of the shoots produced in spring, there is nothing to distinguish it. A root from Snowdon was not altered in the garden at the time of blossoming in the succeeding year; in the following autumn the leaves were found very large, having from five to nine spreading segments, or deeply 3-parted. In the flowering state they corresponded with the *var.* δ.—On the other hand, wild specimens from Twll dû, with terminal flower-stalks, rather belong to the *var.* γ.

16. S. *affínis*, Don, (*involute alpine Saxifrage*); "radical leaves 5-cleft, those of the trailing shoots mostly 3-cleft, lobes linear pointed, segments of the calyx awl-shaped channelled pointed recurved, petals oblong inflexed at the edges. *D. Don in Tr. of Linn. Soc. v. xiii. p.* 418. *Engl. Fl. v. ii. p.* 275.

On the top of Brandon mountain, county of Kerry; *Mr. J. T. Mackay.*—♃.

17. S. *incúrvifolia*, Don, (*curve-leaved Saxifrage*); "somewhat glabrous, radical leaves 5-cleft, those of the trailing shoots trifid, segments lanceolate obtuse incurved, calycine segments ovate acute, petals roundish emarginate." *D. Don in Tr. of Linn. Soc. v. xiii. p.* 423. *Engl. Fl. v. ii. p.* 276.—*S. incurva, Mackay MSS.*

Alpine rocks, Ireland; *Mr. J. T. Mackay.*—♃.

18. S. *denudáta*, Don, (*smooth Grampian Saxifrage*); "somewhat glabrous, radical leaves 5-fid, those of the trailing shoots tripartite, segments linear-subulate acute, calyx-segments lanceolate mucronulate, petals obovate emarginate." *D. Don in Tr. of Linn. Soc. v. xiii. p.* 424.—*S. cæspitosa*, δ. *Hook. Scot. i. p.* 131.

Mountains of Angus-shire, *G. Don.* ♃.—*Sir James E. Smith* seems to consider this a *var.* of the preceding; and *Mr. W. Wilson* observes that the reflexed points of the calyx mentioned in the description are very general in varieties of *S. hypnoides*, and that the lanceolate shape of its segments is probably accidental.

19. S. *elongélla*, Sm. (*long-stalked Saxifrage*); radical leaves 3 or 5-cleft, those of the upright short shoots undivided or 3-cleft all bristle-pointed slightly fringed, primary flower-stalks very long simple and naked, calyx pointed, petals obovate. *Engl. Bot. t.* 2277. *D. Don in Tr. of Linn. Soc. v. xiii. p.* 449. *Engl. Fl. v. ii. p.* 279.—*S. cæspitosa*, γ. *Hook. Scot. i. p.* 131.

Moist rocks, near Lintrathen, Angus-shire, *Mr. G. Don. Fl.* June. ♃. Mr. Wilson thinks that, according to the description, it is hardly possible for this to be any thing else but a *var.* of *hypnoides.*

20. S. *lætevírens*, Don, (*bright-green alpine Saxifrage*); trailing

shots procumbent elongated, leaves 5 or 3-parted, segments linear acute, calycine segments lanceolate mucronate, petals spathulate emarginate. Don.—*D. Don in Tr. of Linn. Soc. v. xiii. p.* 451. *Engl. Fl. v. ii. p.* 280.—S. *cæspitosa, β. Hook. Scot. i. p.* 131.

Mountains of Angus-shire, Aberdeenshire and north of Loch Lomond, *G. & D. Don.* ♃.—“ The recurved points of the segments of the leaves may possibly distinguish this as a species; but at present I think its claims very doubtful.” *W. Wilson.*

26. S. *pedatífida*, Ehrh. (*pedatifid-leaved Saxifrage*); lower leaves and those of the rather short sterile shoots upon very long footstalks, divided into 3 deep linear-lanceolate acute spreading segments, the lateral ones bifid, panicle cymose, calyx superior as long as the germen. *Engl. Bot. t.* 2278. *Hook. Scot. i. p.* 132. (*excl. syn. var. β.*) *D. Don in Tr. of Linn. Soc. v. xiii. p.* 414. *Engl. Fl. v. ii. p.* 280.

Rocks near the head of Clova, Angus-shire, *G. Don.*—*Fl.* May. ♃.—A species very distinct from any British one, nor does it appear to be noticed in Sternberg's valuable work, though coming near to his *S. ladanifera* and *S. pentadactylis.*—Whole *plant* rigid. *Stems* reddish, glabrous. *Leaves* slightly pubescent and viscid. *Panicle* much branched, cymose and subfastigiate. *Flowers* rather small. *Petals* linear-obovate, thrice as long as the *calyx teeth. Germen* inferior, oblongo-ovate. *Teeth of the calyx* longer than in any of this division.—*S. geranioides, Linn.* differs from the present species in its broadly wedge-shaped divisions of the *leaves*, which are of a much thinner texture. The *panicle*, however, the *flowers, calyx* and *germen* are precisely of the same structure. I should have thought it identical with *S. ladanifera* of La Peyrouse, (which indeed Mr. D. Don makes a *var.* of it), but that *that* species is described as being covered with little points, whence an odoriferous gum exudes. *S. pentadactylis* has its leaves extremely narrow, indeed, and obtuse. Another species, very closely allied to our plant, is the *S. ceratophylla* of *Hort. Kew.* and *Sims*, in *Bot. Mag. t.* 1651, of which I possess specimens through the liberality of Mr. Aiton. It is distinguished by its still more rigid habit; by the divisions of the lobes being bent back like a sickle; and by having the calyx covered with a resinous, not a clammy varnish; it is a native of Spain,—as *geranoides, ladanifera* and *pentadactylis* are of the Pyrénées.

9. SAPONÁRIA. *Linn.* Soapwort.

Cal. monophyllous, tubular, 5-toothed, without *bracteæ* at the base. *Pet.* 6, clawed. *Capsule* oblong, 1-celled.—*Nat. Ord.* CARYOPHYLLEÆ. *Juss.*—Named from *Sapo*, soap. The plant yields a mucilaginous juice, which has been employed in lieu of that useful article.

H, 1. S. *officinális*, Linn. (*common Soapwort*); leaves ovato-lanceolate, calyces cylindrical glabrous. *Engl. Bot. t.* 1060. *Hook. Scot. i. p.* 134. *Engl. Fl. v. ii. p.* 284.

Road-sides, margins of woods, and hedge-banks, especially near cottages. *Fl.* July, Aug. ♃.—1—1½ foot high, with a rather stout, cylindrical *stem.* *Leaves* ribbed, opposite and connate. *Panicle* of numerous large, rose-coloured *flowers.* *Limb* of the *corolla* obcordate.—This plant makes a lather with water. Sir James E. Smith mentions a curious *var.*, found near Liverpool, and in Northamptonshire, having a monopetalous *corolla.*

10. DIÁNTHUS. *Linn.* Pink.

Cal. monophyllous, tubular, 5-toothed, with about 4, imbricated, opposite *scales* or *bracteæ* at the base. *Pet.* 5, clawed. *Caps.* cylindrical, 1-celled.—*Nat. Ord.* CARYOPHYLLEÆ. *Juss.*—Name derived from ζευς, διος, *Jupiter*, and ανθος, a *flower:* dedicated as it were to Deity itself; to express the high value that was set upon this charming genus of plants.

* *Flowers clustered.*

H. 1. D. *Armèria*, Linn. (*Deptford Pink*); flowers clustered fascicled, scales of the calyx lanceolate downy as long as the tube. *Engl. Bot. t.* 317. *Hook. Scot. i. p.* 134. *Engl. Fl. v. ii. p.* 286.

Pastures and hedges; not uncommon in England and Scotland. In fields at Carse, Angus-shire, *G. Don.* Leetown in the Carse of Gowrie, *Mr. James Macnab.* *Fl.* July, Aug. ⊙.—1—1½ foot high, branched upwards. *Leaves* linear, opposite and connate, slightly pubescent, upper ones acute. *Limb* of the *petals* rose-coloured, with white (not red, as mentioned in *Engl. Bot.*) dots, crenate at the margin. *Flowers* scentless.

H. 2. D. *prólifer*, Linn. (*proliferous Pink*); flowers clustered capitate, scales of the calyx ovate blunt membranous longer than the tube, leaves rough at the edge. *Engl. Bot. t.* 956. *Engl. Fl. v. ii. p.* 286.

Gravelly pastures, in England, rare: Selsey island, Sussex; near Hampton-court; near Norwich; and at Hanby Castle, Worcestershire. *Fl.* July. ⊙.—Readily distinguished by its small, deep-coloured *flowers*, of which only one in a head expands at a time; and the large, dry, brown and membranaceous *scales* which envelop the *calyces* of several flowers. *Limb* of the *petals* obcordate, notched.

** *Flower solitary; several on the same stem.*

H. 3. D. *Caryophýllus*, Linn. (*Clove Pink, Carnation,* or *Clove Gillyflower*); stem branched, flowers solitary, scales of the calyx 4 very short ovate submucronate, petals broad crenated, leaves linear-subulate grooved glaucous. *Engl. Bot. t.* 214. *Engl. Fl. p.* 287.

On ruined walls, as at Norwich; and on the castles of Deal, Sandown, Rochester, &c. From the latter station, the *Rev. Prof. Henslow* has sent me excellent specimens, gathered this year (1829.) *Fl.* July. ♃.—Few persons, on seeing this plant as it grows on old walls, would suppose it was the origin of one of the "fairest flowers o' the season,"

> "The curious choice Clove *July-flower*,"

or *Carnation* of our gardens, with its endless variety, as to colour and form; yet such it is always considered to be.

H. 4. D. *deltoídes*, Linn. (*Maiden Pink*); flowers solitary, scales of the calyx about 2 ovato-acuminate short, leaves bluntish somewhat downy, petals crenate glabrous. *Engl. Bot. t.* 61. *Hook. Scot. i. p.* 184. *Engl. Fl. v. ii. p.* 288.

β. scales of the calyx mostly 4, petals nearly white. *D. glaucus, Linn.*

Borders of fields, banks and hedges, on a gravelly or sandy soil, in England and Scotland, extending as far north as Ross-shire; *Mr. G. Anderson.* About Edinburgh, &c. where, in the King's Park, grows the *var.* β. *Fl.* July, Aug. ♃.—A small plant, much branched even from its very base. *Petals* very beautiful, rose-coloured, spotted with white, with a white eye enclosed in a deep purple ring.

*** *Stems single-flowered.*

H. 5. D. *cǽsius*, Sm. (*Mountain Pink*); stems single-flowered, scales of the calyx short roundish, leaves scabrous at the margin, petals unequally crenate hairy. *Engl. Bot. t.* 62. *Engl. Fl. v. ii. p.* 288.

On the Limestone works at Cheddar, Somersetshire. *Fl.* June, July. ♃.—This exceedingly rare plant has very glaucous *foliage*, and, comparatively, large, fragrant *flowers*, of a delicate rose-colour.

ORD. III. TRIGYNIA. 3 *Styles.*

11. SILÉNE. *Linn.* Catchfly.

Cal. monophyllous, tubular, often ventricose, 5-toothed. *Pet.* 5, clawed, mostly crowned at the mouth, and the *limb* generally notched or bifid. *Caps.* 3-celled, 6-toothed, many-seeded.—*Nat. Ord.* CARYOPHYLLEÆ. *Juss.*—Name; supposed to arise from σιαλον, *saliva*, in allusion to the viscid moisture on the stalks of many species; hence too, the English name *Catchfly.*

* *Stems tufted, short. Peduncles single-flowered.*

H. 1. S. *acaulis*, Linn. (*Moss Campion*); cæspitose, leaves linear ciliated at the base, peduncles solitary single-flowered, petals crowned slightly notched. *Engl. Bot. t.* 1081. *Hook. Scot. i. p.* 135. *Engl. Fl. v. ii. p.* 299.

Rocky places on Snowdon. Devonshire, (*Dill.*) Abundant on all the Scottish mountains. *Fl.* June, July. ♃.—*Stems* short, 2—3 inches high, much branched and tufted. *Leaves* patent. *Flowers* beautiful purple.—One of the greatest ornaments of our Alps; not unfrequently found with white *flowers.*

** *Stems elongated. Flowers solitary or panicled. Calyx inflated, bladdery.*

H. 2. S. *infláta*, Sm. (*Bladder Campion*); flowers numerous panicled, petals deeply cloven with narrow segments scarcely crowned, calyx inflated reticulated, stem erect, leaves ovato-lanceolate. *Hook. Scot. i. p.* 134. *Engl. Fl. v. ii. p.* 292.—*Cucubalus Behen, Engl. Bot. t.* 164.

β. calyx, stem and leaves downy.

Pastures and road-sides, common. β. near Cromer, Norfolk; *Mr. D*

Turner. Banks of the Clyde, Scotland, *Mr. Hopkirk*. *Fl.* June—Aug. ♃.—Whole plant glaucous, variable in the size and shape of its *leaves*, and in the more or less numerous *flowers*. *Petals* pure white. The downy variety maintains its characters after many years' cultivation in the Glasgow Botanic Garden.

H. 3. S. *marítima*, With. (*Sea Campion or Catchfly*); panicles few-flowered, petals with a shallow cleft and broad segments crowned, calyx inflated reticulated, stems spreading, leaves ovato-lanceolate or spathulate. *Engl. Bot. t.* 957. *Engl. Fl. v. ii. p.* 293.—*S. inflata*, β. *Hook. Scot. i. p.* 135.

Frequent upon the sea-shore in sandy and stony places; as well as by alpine rills. *Fl.* June—Aug. ♃.—This, although it has smaller *stems* and *leaves* than the last, has larger *flowers*; yet I will not say I have done right in again restoring it to the rank of a species. Sir James E. Smith says it is certainly distinct and that its characters are preserved in cultivation. This we do not find to be the case in the Glasgow Botanic Garden, where after a time it certainly grows more erect, bears more numerous flowers and seems almost intermediate between the two. Mr. W. Wilson finds a *var.* in Caernarvonshire with a *panicle* of 7 *flowers*. In this and the preceding, the *styles* are variable in number.

*** *Stems elongated. Flowers in racemes and whorled.*

H. 4. S. *Otítes*, Sm. (*Spanish Catchfly*); stems erect nearly simple with few leaves, flowers in whorls diœcious, petals linear entire, leaves spathulate. *Engl. Fl. v. ii. p.* 298.—*Cucubalus Otites, Engl. Bot. t.* 85.

Sandy fields, chiefly in Norfolk, Suffolk and Cambridgeshire. *Fl.* July, Aug. ♃.—Remarkable for the small, unassuming, diœcious *flowers* and their linear, yellowish, entire *petals*.

**** *Stems elongated, branched. Flowers in leafy racemes, alternate.*

5. S. *ánglica*, Linn. (*English Catchfly*); hairy and viscid, petals (small) crowned slightly bifid, calyces with setaceous teeth ovate in fruit and sometimes reflexed. *Engl. Bot. t.* 1178. *Engl. Fl. v. ii. p.* 291.

Sandy and gravelly fields; in Surrey, Cambridgeshire, Hertfordshire, and Norfolk; South Port, Lancashire, and North Wales; *Mr. W. Wilson.* Between Dundee and St. Andrews; and near Perth, *Mr. Mackay.* (*Sm.*) *Fl.* June, July. ⊙.—More or less viscid. *Leaves* lanceolate, the lower ones spathulate. *Flowers* solitary from the axils of the upper leaves. *Calyx* at first cylindrical, scarcely shorter than the *petals*, erect; at length the *lower ones*, when in fruit, have their pedicels often singularly reflected. *Petals* mostly white, sometimes with a faint tinge of red in the middle, when they, as does the rest of the plant, much resemble the following species.

H. 6. S. *quinquevúlnera*, Linn. (*variegated Catchfly*); pubescent, limb of the petals roundish entire, flowers secund, calyces with setaceous teeth and always erect very hairy. *Engl. Bot. t.* 86. *Engl. Fl. v. ii. p.* 292.

Sandy corn-fields, near Wrotham, Kent; *Hudson.* Dupbra's Hill, by Croydon; *Mr. Borrer. Fl.* June, July. ⊙.—A common annual in our gardens, and which derives its Latin specific name from the 5 deep red spots on its *petals* resembling marks of blood, but which become more or less faint in cultivation.

***** *Stem panicled, leafy. Calyx not bladdery.*

H. 7. S. *nútans*, Linn. (*Nottingham Catchfly*); flowers panicled secund cernuous, branches opposite, petals deeply cloven their segments linear crowned, leaves (of the stem) lanceolate pubescent. *Engl. Bot. t.* 465. *Hook. Scot. i. p.* 135. *Engl. Fl. v. ii. p.* 296.

β. leaves broader. *S. paradoxa*, Sm. (*not* Linn.)

Limestone rocks, and chalky cliffs in England. About Nottingham. In Caernarvonshire. Ormeshead, *Mr. W. Wilson.* Knaresborough, Yorkshire; Dovedale, Derbyshire.—North Queensferry and near Arbroath, Scotland. β. on Dover cliffs, *Ray.*—One foot, or one foot and a half high. *Root-leaves* spathulate, acute. *Calyx* tubular, clavate. *Petals* rather large, white. *

H. 8. S. *cónica*, Linn. (*striated Corn Catchfly*); panicle forked, petals bifid crowned, leaves linear downy, calyx in fruit conical with numerous furrows. *Engl. Bot. t.* 922. *Engl. Fl. v. ii, p.* 294.

At New Romney and Sandown Castle, Kent. *Fl.* July. ⊙.—*Petals* purple, small. *Calyx* of the flower almost tubular, of the fruit, so broad and swollen at the base as to be nearly conical. It is moreover finely striated.

H. 9. S. *noctiflóra*, Linn. (*night-flowering Catchfly*); panicle forked, petals bifid, calyx with long teeth oblong in fruit with 10 connected ribs, leaves lanceolate lower ones spathulate. *Engl. Bot. t.* 291. *Hook. Scot. i. p.* 135. *Engl. Fl. v. ii. p.* 295.

Corn-fields in a sandy or gravelly soil, in several counties of England. Coast of Angus-shire, Scotland; *G. Don.* Near Inveresk, *Mr. Coldstream. Fl.* July. ⊙.—One foot or more high. *Leaves* much like the last, pubescent. Upper part of the *stem* many times dichotomous, each branchlet terminated with a single flower, and a solitary flower in the axil of the fork. *Flowers* rather large, sweet-scented, pale reddish, almost white. *Peduncles* viscid.

****** *Stems elongated. Flowers corymbose. Calyx clavate.*

10. S. *Arméria*, Linn. (*common or Lobel's Catchfly*); panicles forked corymbose with crowded flowers, petals notched and crowned with awl-shaped scales, calyx clavate and as well as the leaves glabrous, leaves ovato-lanceolate, stem viscid. *Engl. Bot. t.* 1398. *Engl. Fl. v. ii. p.* 296.

Banks of the Dee, half a mile from Chester. *Fl.* July, Aug. ⊙.—"A doubtful native." Extremely common in gardens. *Flowers* purple. *Calyx* singularly clavate. The *germen* and *capsule* are elevated upon a

H. * Silene Italica. Appen. 17.

stalk; hence the lower part of the calyx is contracted, while the upper part is swollen by the enlargement of the capsule.

12. STELLÁRIA. *Linn.* Stitchwort.

Cal. of 5 leaves. *Pet.* 5. deeply cloven. *Caps.* opening with 6 teeth, many-seeded.—*Nat. Ord.* CARYOPHYLLEÆ. *Juss.*—Name from *stella*, a star; because the corolla is spread in a star-shaped manner.

H. 1. S. *némorum*, Linn. (*Wood Stitchwort*); leaves petiolate cordate, upper ones ovate sessile, panicle dichotomous. *Engl. Bot. t.* 92. *Hook. Scot. i. p.* 135. *Engl. Fl. v. ii. p.* 300.

In moist woods, principally in the north of England and Lowlands of Scotland. *Fl.* May, June. ♃.—One foot to 1½ foot high. *Stems* weak, pubescent above. *Leaves* very large, glabrous, but rough with extremely minute, elevated dots, sometimes ciliated at the margin. *Calyx-leaves* white at the margin. *Petals* narrow, deeply bifid, pure white.

H. 2. S. *média*, With. (*common Chick-weed or Stitchwort*); leaves ovate, stems procumbent with an alternate line of hairs on one side, petals 2-partite, stamens 5—10. *Engl. Bot. t.* 537. *Hook. Scot. i. p.* 135. *Engl. Fl. v. ii. p.* 301.—*Alsine media, Linn.*

Road-sides and waste places, abundant. *Fl.* almost the whole year. ⊙.—*Stem* weak, with alternate lines of hairs between each pair of leaves, by which the species is admirably distinguished. *Leaves* on footstalks, except the uppermost; glabrous. *Flowers* small, white, on solitary axillary and terminal stalks.—It is a good potherb, and small birds are very fond of the seeds. said to increase the number of eggs laid by hens supplied with it.

H. 3. S. *holóstea*, Linn. (*greater Stitchwort*); stem nearly erect, leaves lanceolate much acuminated finely serrulated, petals inversely heart-shaped bifid twice as long as the nerveless calyx. *Engl. Bot. t.* 211. *Hook. Scot. i. p.* 136. *Engl. Fl. v. ii. p.* 301.

Woods and hedges, frequent. *Fl.* May. ♃.—*Plant* 1 foot to one foot and a half high, rather rigid and brittle, somewhat glaucous. *Flowers* large and with much broader *petals* than the two following, pure white. *Panicle* of few flowers, leafy.

H. 4. S. *gramínea*, Linn. (*lesser Stitchwort*); stem nearly erect, leaves lanceolate acute entire, panicle much branched, petals very deeply cleft, segments linear scarcely longer than the 3-nerved leaves of the calyx. *Engl. Bot. t.* 803. *Hook. Scot. i. p.* 136. *Engl. Fl. v. ii. p.* 302.

Dry pastures, fields and heaths, common. *Fl.* May. ♃.—One foot high, more slender than the last, and readily distinguishable by its much smaller *flowers*, large and branching *panicle*, 3-nerved *calyx*, and entire *leaves*, which are, moreover, by no means so much acuminated.

H. 5. S. *glauca*, With. (*glaucous Marsh Stitchwort*); stem nearly erect, leaves linear-lanceolate entire glaucous, flowers upon long solitary axillary footstalks, petals very deeply cleft their segments much longer than the 3-nerved calyx. *Engl. Bot. t.* 825. *Hook. Scot. i. p.* 136. *Engl. Fl. v. ii. p.* 303.

Wet, marshy places, margins of lakes, &c.—*Fl.* June, July. ♃.—Equally slender with the last, 1 foot high. *Flowers* next in size to those of *S. holostea.* Readily known from that and *S. graminea* by its narrower, glaucous *leaves,* solitary, axillary *flowers,* and the narrow *calyx-leaves,* which, like the last, are 3-nerved.

H. 6. S. *uliginósa,* Murr. (*Bog Stitchwort*); leaves ovato-lanceolate entire with a callous tip, flowers in dichotomous panicles, petals bipartite shorter than the leaflets of the calyx which are combined at the base. *Engl. Bot. t.* 1074. *Hook. Scot. i. p.* 136. *Engl. Fl. v. ii. p.* 303.—*Larbræa, St. Hil. De Cand. Lindl.*—*S. graminea, β. Linn.*

In ditches and rivulets, frequent. *Fl.* June. ☉.—This species, besides having the *calyx-leaves* combined at the base, has the *stamens* and *petals* truly perigynous. Hence St. Hilaire, who makes of it his Genus *Larbræa* (in honour of the *Abbé de Larbre,*) seems to think it more allied to his *Paronychiæ* than to the *Caryophylleæ.* Its general habit, however, is surely that of a *Stellaria,* from all the other species of which it is distinguished by its comparatively minute *petals.*

7. S. *cerastoídes,* Linn. (*alpine Stitchwort*); stems decumbent with an alternate hairy line, leaves oblongo-spathulate, peduncles 2 or 3 mostly terminal downy as is the calyx which is about half the length of the bifid corolla. *Hook. Scot. i. p.* 136.

α. leaves hairy. *S. cerastoides, Linn.*—*Cerastium nivale, Don MSS.*—*Cerastium trigynum, Vill. Delph. iii. p.* 615. *t.* 46.

β. leaves glabrous. *S. cerastoides, Wulf. in Jacq. Coll. v. i. p.* 254. *t.* 19. *Engl. Bot. t.* 911. *Engl. Fl. v. ii. p.* 305.

Breadalbane mountains of Scotland, and mountains to the north of that great range. *Fl.* July, Aug. ♃.—Four to 6 inches long. Lower part of the *stem* bare of leaves and much branched. *Leaves* subsecund and subfalcate, as observed by Wahlenberg; their points callous. *Flowers* large, pure white. Sir James E. Smith observes that the *styles* are sometimes 4 and 5, and the *capsules,* on my specimens, have some 6, and some 10 teeth; so that this plant has as great a claim to rank with the *Cerastia* as with the *Stellariæ.*

8. S. *scapígera,* Willd. (*many-stalked Stitchwort*); stem shorter than the flowerstalks, leaves linear-lanceolate crowded pubescenti-scabrous at the margin, calyx 3-nerved as long as the petals. *Engl. Bot. t.* 1269 (leaves too broad.) *Hook. Scot. i. p.* 137. *Engl. Fl. v. ii. p.* 304.

Hills to the north of Dunkeld and about Loch Nevis, *G. Don. Fl.* June. ♃.—I possess only cultivated specimens of this remarkable plant, which was first described by Willdenow. He attributes to it single-flowered *peduncles;* but in my plants these peduncles, of which many arise from the extremity of the very short *stems,* are mostly branched in the middle, where they have 2, small, ovate, acute, membranaceous *bracteas.*

13. ARENÁRIA. *Linn.* Sandwort.

Calyx of 5 leaves. *Pet.* 5, undivided. *Capsule* 1-celled, many-seeded.—*Nat. Ord.* Caryophylleæ. *Juss.*—Named from *arena*, sand; the greater number of species growing in sandy soils.

* *Stipules none.*

H. 1. A. *peploídes*, Linn. (*Sea-side Sandwort*); glabrous, leaves ovate acute fleshy, calyx obtuse ribless. *Engl. Bot. t.* 189. *Hook. Scot. i. p.* 137. *Engl. Fl. v. ii. p.* 306.—*Honckenya, Ehrh.*—*Adenarium, Rafin.*—*De Cand. Prod. v. iii. p.* 366. (*in note.*)

Honkeneja peploides Bab.

On sandy sea-shores, frequent. *Fl.* July. ♃.—*Root* long and creeping, slender. *Stems* decumbent at the base; *branches* erect, leafy upwards. *Leaves* large, decussate, connate, fleshy, shining, a little recurved. *Flowers* solitary or 2—3 together, in the axils of the upper leaves, nearly sessile, closing in the shade. *Petals* white, small, scarcely longer than the *calyx*, distant, broadly ovate, shortly clawed: surrounding the *germen* are 10 *glands*, alternating with the *stamens*. *Capsule* large, roundish, 3—5 valved, with, comparatively, few, large and black *seeds*.—The habit of this is very different from the rest of the Genus, and it is said that the flowers are diœcious. It is certain that very extensive patches of the plant have abortive flowers.

H. 2. A. *trinérvis*, Linn. (*three-nerved Sandwort*); leaves ovate acute petiolate 3-(rarely 5-) nerved ciliated, flowers solitary, calyces rough on the keel with 3 obscure ribs. *Engl. Bot. t.* 1483. *Hook. Scot. i. p.* 137. *Engl. Fl. v. ii. p.* 307.

Moehringia trinervis Bab.

Shady woods and moist places. *Fl.* May. ☉.—*Stems* 1 foot high, much branched, pubescent. Upper *leaves* sessile. *Flowerstalks* an inch or more long, from the forkings of the extremities of the stem; in *fruit* spreading, the upper part deflexed. *Petals* oblongo-obovate, white, scarcely longer than the acute *segments* of the *calyx*.

H. 3. A. *serpýllifolia*, Linn. (*Thyme-leaved Sandwort*); leaves ovate acute subscabrous sessile, calyx hairy its outer leaves 5-ribbed. *Engl. Bot. t.* 923. *Hook. Scot. i. p.* 138. *Engl. Fl. v. ii. p.* 307.

Walls and dry waste places, frequent. *Fl.* June. ☉.—Two to 6 inches high, erect or procumbent, much branched, pubescent. *Leaves* small, rather rigid. *Flowers* white, on short stalks, from the forkings of the upper part of the stem or the axils of the leaves. *Petals* as long as the *calyx*.—Mr. W. Wilson finds a *var.* at Bangor, having the petals only ¼ as long as the calyx, which has prominent ribs and 5 stamens.

4. A. *ciliáta*, Linn. (*fringed Sandwort*); leaves spathulate roughish ciliated at the base, stems much branched procumbent, flowers terminal solitary, calyx-leaves lanceolate acute with many ribs half as long as the corolla. *Engl. Bot. t.* 1745. *Engl. Fl. v. ii. p.* 310.

Mountains in Ireland, rare. Limestone cliffs, near Ben Bulben, a high mountain in Sligo; *Mr. J. T. Mackay.* *Fl.* Aug. Sept. ♃.

5. A. *vérna*, Linn. (*vernal Sandwort*); stems numerous panicled above, leaves subulate acute when dry 3-nerved, petals obovate and

as well as the capsule longer than the lanceolate acuminated 3-nerved calyx. *Engl. Bot. t.* 512. *Hook. Scot. i. p.* 138. *Engl. Fl. v. ii. p.* 309.

Rocky and mountainous pastures, in the north of England and Wales; abundant on Arthur's Seat and in other places about Edinburgh; but never found further north, I believe, nor at all in the west of Scotland. *Fl.* May, June. ♃.—*Stems* 3—4 inches high, slightly hairy, as are the *calyces* and *peduncles.* Lower *leaves* crowded, often curved; upper ones distant.

6. A. *rubélla*, Hook. (*alpine Sandwort*); stems numerous, peduncles terminal downy single-flowered, leaves linear-subulate obtuse 3-nerved, petals elliptico-lanceolate and as well as the 4-valved capsule shorter than the lanceolate very acute 3-nerved calyx. *Hook. in Parry's 2d Voy. App.—in Fl. Lond. N. S. t.* 200. *Engl. Fl. v. iv. App. p.* 267.—*Alsine rubella, Wahl.—Arenaria quadrivalvis, Br.*

Near the summits of the Breadalbane mountains, among soil and broken rocks; very rare. On Craigalleach, *Dr. Earl.* On Ben Lawers; first found, it now appears, by *Mr. Don;* since by *Mr. Murray, Dr. Greville* and in one spot most abundantly by *Mr. W. Wilson* and *Dr. Graham. Fl.* July. ♃.—This is quite an alpine or arctic plant. It loves to grow with its *root* buried under a loose piece of rock, and late in the summer often acquires a reddish tinge. *Stamens* from a glandular disk. *Styles* 3, 4 or 5: the *valves* of the *capsule*, consequently, equally variable.

7. A. *tenuifólia*, Linn. (*fine-leaved Sandwort*); stems much branched dichotomous panicled above, leaves narrow linear-subulate, petals lanceolate much shorter than the narrow-lanceolate 3-nerved calyx, capsule 3-valved as long as the calyx. *Engl. Bot. t.* 219. *Hook. Scot. i. p.* 138. *Engl. Fl. v. ii. p.* 308.

Sandy fields; Norfolk, Cambridgeshire, Oxfordshire, &c. Cramond Island, Firth of Forth; and near Pettycur Harbour, Scotland; *Mr. Yalden and G. Don. Fl.* June. ⊙.—*Stems* 4—6 inches high, glabrous; throughout remarkably slender, especially the *peduncles.*

8. A. *fastigiáta*, Sm. (*level-topped Sandwort*); stems erect straight, leaves fascicled subulato-setaceous erect, flowers fascicled, calyx much acuminated (white) with two central (green) ribs twice as long as the ovate petals. *Engl. Bot. t.* 1744. *Hook. Scot. i. p.* 138. *Engl. Fl. v. ii. p.* 309.

In Fifeshire and mountains of Angus-shire, *Mr. Don. Fl.* June. ⊙.—Sir James E. Smith rightly distinguishes this, the *A. fasciculata* of Jacq., from the species so named by Gouan; of which very rare plant I possess Gouan's original specimen. Scottish specimens I have never met with; but judging from the figure in *Engl. Bot.* I do not see how it is to be separated from the *A. mucronata* of *De Cand.* (*Alsine*, Gouan). It is very peculiar in its habit and quite unlike any other British species. The *seeds* "are beautifully toothed at the margin, each on a long stalk."

** *Stipules at the base of each pair of leaves.*

9. A. *rúbra*, Linn. (*purple Sandwort*); stems prostrate, leaves

narrow linear acute plane somewhat fleshy tipped with a very minute bristle, stipules ovate cloven, capsule as long as the calyx, seeds compressed angular roundish. *Engl. Bot. t.* 852. *Hook. Scot. i. p.* 138. *Engl. Fl. v. ii. p.* 311.

Gravelly or sandy soils, frequent. *Fl.* June. ⊙.—Very much branched and spreading. *Stipules,* a pair of ovate, acute, white, membranaceous *scales,* united at their base. *Flowers* numerous, in the axils of the upper *leaves,* solitary. *Calyx* nerveless, and as well as the rather short *peduncles,* glandular and viscid. *Petals* ovate, red, about as long as the calyx. *Peduncles,* after flowering, slightly bent back.—The *seeds* constitute the essential character by which this is known from the following species.

10. A. *marína,* Oed. (*Sea-Spurrey Sandwort*); stems prostrate, leaves semicylindrical fleshy awnless, stipules ovate cloven, capsule longer than the calyx, seed compressed smooth with a broad membranous pellucid border. *Engl. Bot. t.* 958. *Hook. Scot. i. p.* 139. *Engl. Fl. v. ii. p.* 311.—*A. rubra, β. Linn.*

Frequent upon the sea-coast. *Fl.* June, July. ⊙, or ♂.—Much larger and stouter in all its parts than the last, besides the difference arising from the seed: still I am not sure that these marks may not depend upon difference of situation. Indeed I have now before me a pubescent *variety,* gathered in the Isle of Man by Mr. Wilson, in which the seeds are rough without a border; and another with the seeds smooth and without a border.

14. CHERLÉRIA. *Linn.* Cyphel.

Cal. of 5 leaves, united at the base. *Pet.* 5, extremely minute, notched. *Stam.* with glands at the base. *Caps.* 1-celled, opening with 3 valves, many-seeded.—*Nat. Ord.* CARYOPHYLLEÆ. *Juss.* —Named in honour of *John Henry Cherler,* a friend and coadjutor of John Bauhin in the Prodromus of his *Hist. Général. Pl.* in 1619.

H. 1. C. *sedoídes,* Linn. (*mossy Cyphel, dwarf Cherleria*). *Engl. Bot. t.* 1212. *Hook. Scot. i. p.* 139. *Engl. Fl. v. ii. p.* 312.

Summits of the Highland mountains, especially those of the Breadalbane range. *Fl.* June—Aug. ♃.—*Roots* exceedingly long, running deep into the earth; bearing, above, innumerable short, forked *stems,* and forming a dense mass which scarcely rises above the surface of the soil. *Leaves* crowded, linear-subulate, channelled above, slightly ciliated and glandular at the edge. *Flowers* solitary, imbedded among the dense mass of leaves, yellow-green. *Cal.* membranous at the edge.

(*See* Polygonum *in* CL. VIII.)

ORD. IV. PENTAGYNIA. 5 *Styles.*

15. COTYLÉDON. *Linn.* Pennywort.

Cal. 5-partite. *Cor.* monopetalous, tubular, 5-cleft. *Capsules* 5, each with a *gland* or nectariferous scale at its base.—*Nat. Ord.* CRASSULACEÆ. *De Cand.*—Name from κοτυλη, a *cup,* to which the leaves of some of the species bear a distant resemblance.

H. 1. C. *Umbilícus*, Huds. (*Wall Pennywort*); leaves peltate crenate depressed in the centre, stem with a (usually) simple raceme of pendulous flowers, upper bracteas minute entire. *Engl. Bot. t.* 325. *Hook. Scot. i. p.* 139. *Engl. Fl. v. ii. p.* 314.—*Umbilicus pendulinus, De Cand.*

Rocks, walls and old buildings, especially in subalpine countries. *Fl.* June—Aug. ♃.—Whole plant succulent. *Stems* from 6 inches to a foot high, rounded. *Leaves* mostly radical. *Flowers* cylindrical, yellowish-green.

2. C. *lútea*, Huds. (*yellow Pennywort*); lower leaves only somewhat peltate crenate, raceme with erect flowers, bracteas subdentate. *Engl. Bot. t.* 1522. *Engl. Fl. v. ii. p.* 314.—*Umbilicus erectus, De Cand.*

Walls and rocks, very rare. West Riding of Yorkshire, *Mr. Tofield.* Mr. Hudson understood it to grow in Somersetshire. *Fl.* July. ♃.

16. SÉDUM. *Linn.* Orpine or Stone-crop.

Cal. in5 (sometimes 4—8) deep segments, often resembling the leaves. *Petals* 5, patent. *Germens* 5, each with a nectariferous scale at its base.—*Nat. Ord.* CRASSULACEÆ. *De Cand.*—Name from *sedo*, to sit, from the humble growth of these plants on their native rocks. Plants will live when gathered for months if only occasionally sprinkled with water.

* *Leaves plane.*

1. S. *Teléphium*, Linn. (*Orpine, or Live-long*); leaves oval-oblong plane serrated, corymbs leafy, stems erect. *Engl. Bot. t.* 1319. *Hook. Scot. i. p.* 140. *Engl. Fl. v. ii. p.* 315.

Borders of fields, hedge-banks, and waste places among bushes. *Fl.* July. ♃.—One to 2 feet high. *Stem* spotted. *Leaves* broad. *Flowers* purple.—Very unlike any of the following species, and in habit resembling *Rhodiola rosea.*

** *Leaves terete. Flowers white or reddish.*

H. 2. S. *dasyphýllum*, Linn. (*thick-leaved Stonecrop*); leaves opposite (except on the flowering stems) ovato-globose fleshy, panicles glutinous. *Engl. Bot. t.* 656. *Hook. Scot. i. p.* 140. *Engl. Fl. v. ii. p.* 316.

Walls and rocks, in several parts of England. Conway, Wales; *Mr. W. Wilson.* Collinton woods, Edinburgh, *Mr. Arnott.* Cork, Ireland, *Mr. Drummond. Fl.* June. ♃.—*Stems* slender, procumbent below, slightly viscid. *Flowering-stems* 2—3 inches high. *Leaves* short, singularly thick and fleshy, glaucous with a reddish tinge and dotted. *Flowers* tinged with rose-colour. *Petals* and *pistils* 5—8.

H. 3. S. *ánglicum*, Huds. (*white English Stonecrop*); leaves ovate gibbous fleshy produced at the base alternate, cymes few-flowered, petals very sharp at the point. *Engl. Bot. t.* 171. *Hook. Scot. i p.* 140. *Engl. Fl. v. ii. p.* 317.

On sandy and rocky places, especially near the sea; most abundant in Scotland and Ireland, on rocks inland as well as by the sea-shores. *Fl.* June, July. ⊙.—Two to 3 inches high, much branched, procumbent below. *Leaves* glaucous-green, often tinged with red. *Flowers* few in each *cyme*, but very conspicuous from their white, starlike appearance, and their purple *anthers.* It is a great ornament to some of the most barren rocks in the Highlands and Hebrides.

H. 4. S. *álbum*, Linn. (*white Stonecrop*); leaves scattered oblongo-cylindrical obtuse spreading, cyme much branched. *Engl. Bot. t.* 1578. *Hook. Scot. i. p.* 140. *Engl. Fl. v. ii. p.* 319.

Rocks, walls, and roofs of houses, in Middlesex, Worcestershire, Suffolk, and about Peterborough. Forfar and Glamis, Scotland, *G. Don. Fl.* July. ♃.—*Stems* prostrate below only, the *flowering-stem* erect, 3—5 inches high. *Leaves* pale, glaucous-green, sometimes tinged with red. *Flowers* crowded, white or only tinged with rose-colour.

5. S. *villósum*, Linn. (*hairy Stonecrop*); leaves scattered oblong flattened above and as well as the peduncles and stems hairy and viscid. *Engl. Bot. t.* 394. *Hook. Scot. i. p.* 140. *Engl. Fl. v. ii. p.* 319.

Stony moist places and by the sides of rills, frequent in the north of England and Scotland; especially in the subalpine parts. *Fl.* June, July. ♃. (*Sm.*)—Three or 4 inches high, reddish-purple. *Leaves* on the low, barren shoots, almost exactly cylindrical. *Flowers* few, of a pale rose-colour.

*** *Leaves terete. Flowers yellow.*

H. 6. S. *ácre*, Linn. (*biting Stonecrop or Wall Pepper*); leaves erect alternate ovate gibbous fleshy produced at the base, cymes trifid glabrous leafy. *Engl. Bot. t.* 839. *Hook. Scot. i. p.* 140. *Engl. Fl. v. ii. p.* 317.

Walls, rocks, and sandy ground, frequent. *Fl.* June. ♃.—Distinguished among our yellow-flowered species, by its upright, short and very succulent *leaves*, closely imbricated on the barren shoots. Very biting when chewed; and hence its name of *Wall-pepper.*

7. S. *sexanguláre*, Linn. (*insipid yellow Stonecrop*); leaves generally in 6 rows whorled on the barren shoots cylindrical fleshy spreading produced at the base, cyme trifid.

Old walls in the east of England, generally rare. Isle of Sheppey; Greenwich Park wall; in Cambridgeshire, and Wiltshire (Old Sarum, *Mr. D. Turner.*) *Fl.* July. ♃.—Well distinguished from the last by its spreading, larger and slenderer *leaves*, and their insertion.

H. 8. S. *refléxum*, Linn. (*crooked yellow Stonecrop*); leaves awl-shaped scattered spurred at the base, the lowermost recurved, flowers cymose, segments of the calyx ovate. *Sm.—Engl. Bot. t.* 695. *Hook. Scot. i. p.* 141. *Engl. Fl. v. ii. p.* 320.

Walls, roofs of houses and thatched buildings, frequent. *Fl.* July. ♃.—Sterile *branches* with thickly placed *leaves*, often reflexed. *Flowering stems* 6—8 inches high. *Cyme* large, yellow. *Flowers* numerous, often with 6 *petals* and 12 *stamens*. Very similar to this are the three following species.

9. S. *glaucum*, Donn, (*glaucous yellow Stonecrop*); "leaves glaucous awl-shaped scattered produced at the base, those of the branches threadshaped, flower cymose, segments of the calyx lanceolate." *Sm.*—*Engl. Bot. t.* 2477. *Engl. Fl. v. ii. p.* 321.

Rough hills near Mildenhall, Suffolk, *Mr. F. Eagle.* Sunday's-well and Glaskeen, Ireland, *Mr. J. T. Mackay. Fl.* July, Aug. ♃.—"Differs from the last in being of a more glaucous hue, with much slenderer *leaves*, especially on the radical shoots. The branches of the *cyme* are more uniformly spreading and the segments of the *calyx* are narrower and more pointed." *Sm.*

10. S. *rupéstre*, Linn. (*St. Vincent's Rock Stonecrop*); "leaves glaucous produced at the base, those of the branches awl-shaped erect in five close rows, flowers imperfectly cymose, segments of the calyx elliptical obtuse." (*Sm.*)—*Engl. Bot. t.* 170. *Engl. Fl. v. ii. p.* 321.

St. Vincent and Cheddar rocks, Somersetshire. Walls about Darlington, Yorkshire, *Mr. E. Robson. Fl.* July. ♃.

11. S. *Forsteriánum*, Sm. (*Welsh Rock Stonecrop*); "leaves produced at the base, those of the branches semicylindrical bluntish pointed spreading in many rows, flowers cymose, segments of the calyx elliptical obtuse." (*Sm.*)—*Engl. Bot. t.* 1802. *Engl. Fl. v. ii. p.* 322.

Rocks in Wales; at the Fall of Rhydoll, Cardiganshire, *Mr. E. Forster.* At Hisväe, valley of Naut-phrancon, *Dr. Richardson and Mr. Llwyd.* Little Ormeshead, *Mr. W. Wilson. Fl.* June, July.—"Perhaps the compact, hemisphærical or round-topped *cyme* is the best mark by which to distinguish this from *S. reflexum*." *Mr. W. Wilson.*

17. OXÁLIS. *Linn.* Wood-sorrel.

Italian. Alleluia. Druidical emblem of the Trinity

Cal. 5-partite. *Pet.* 5, often united by the base of their claws. *Filaments* often combined below, 5 outer ones shorter. *Caps.* angular, 5-celled: *cells* 2 or many-seeded. *Seeds* with an elastic *arillus*. —*Nat. Ord.* OXALIDEÆ. *De Cand.*—Name from οξυς, *sharp* or *acid*. Our species produce in their leaves oxalic acid, in the state of binoxylate of Potash. (*Professor Thomson.*) Salts of Lemon. 10 lbs of leaves give about 1 oz. but now got from sugar

H. ×1. O. *Acetosélla*, Linn. (*common Wood-sorrel*); leaves all radical ternate, leaflets inversely heart-shaped hairy, scape single-flowered, root scaly. *Engl. Bot. t.* 762. *Hook. Scot. i. p.* 141. *Engl. Fl. v. ii. p.* 323. The Irish Shamrock.

Woods and shady places frequent; also at a great elevation on the mountains, among shady rocks. *Fl.* May, and, on the Alps, till August. ♃.—*Leafstalks* long and slender, reddish. *Leaflets* drooping at night. *Scape* with 2 scaly bracteas. *Flowers* handsome, drooping, white, with purplish veins. The *leaves* have a most agreeably acid flavour.

H. 2. O. *corniculáta*, Linn. (*yellow procumbent Wood-sorrel*);

× called in Switzerland "pain de bon Dieu" from a resemblance to Manna - Ruskin stem branched, branches procumbent, peduncles mostly 2-flowered shorter than the leaves, stipules united to the base of the footstalks. *Engl. Bot. t.* 1726.

Shady waste ground, chiefly in the extreme south of England; Sussex and Devonshire. Found also near Stirling by the late *Dr.* (*Buchanan*) *Hamilton*, and near Glasgow by *Mr. Hopkirk:* but whether really wild or not, I cannot say. *Fl.* through the summer. ⊙.—This is indeed very nearly allied to *O. stricta*, but that species has a more upright, less branched *stem;* more numerous and often whorled *leaves;* with larger *flowerstalks* and several *flowers* in an *umbel;* and no evident *stipules* at the base of the *petioles.*

18. AGROSTÉMMA. *Linn.* Cockle.

Cal. monophyllous, tubular, coriaceous, with 5 teeth. *Pet.* 5, clawed, their border undivided. *Caps.* opening with 5 teeth, 1-celled.—*Nat. Ord.* CARYOPHYLLEÆ. *Juss.*—Name; αγρȣ στεμμα, *Crown of the field*, peculiarly applicable to our species which is a great ornament to corn-fields.

H. 1. A. *Githágo*, Linn. (*Corn Cockle*)*; calyx much longer than the corolla, petals entire destitute of a crown. *Engl. Bot. t.* 741. *Hook. Scot. i. p.* 141. *Engl. Fl. v. ii. p.* 325.—*Lychnis Githago, Lam.*—*De Cand.* Calyx the same length as [illegible] [illegible]

Corn-fields, too frequent. *Fl.* June, July. ♃.—A Genus scarcely different from *Lychnis.*—One to two feet high, branched, erect. *Leaves* linear-lanceolate. *Cal.* ribbed, its segments very long and slender. *Flowers* large, purple. *Seeds* from their number and size injuring the quality of the grain which is thrashed with it.—*Git* or *Gith, du Théis* says, is the Celtic name for a peculiarly large and black seed; whence comes *Githago.*

19. LÝCHNIS. *Linn.* Catchfly.

Cal. monophyllous, tubular, 5-toothed. *Pet.* 5, clawed, crowned at the mouth; mostly divided at the border.—*Nat. Ord.* CARYOPHYLLEÆ. *Juss.*—Name from λυχνος, a *lamp*, the thick cottony substance of the leaves of some species, or some similar plant, having been employed as wicks to lamps.

H. 1. L. *Flos Cúculi*, Linn. (*Meadow Lychnis or ragged Robin*); flowers loosely panicled, petals 4-cleft, capsule roundish 1-celled. *Engl. Bot. t.* 573. *Hook. Scot. i. p.* 141. *Engl. Fl. v. ii. p.* 326.

Moist meadows and pastures, frequent. *Fl.* June. ♃.—One to two feet high, hairy below, reddish-green, clammy above. *Leaves* lanceolate. *Calyx* and *flowerstalks* reddish-purple. *Petals* rose-coloured.

2. L. *viscária*, Linn. (*red German Catchfly*); petals slightly notched at the extremity, capsule 5-celled stalked, stem clammy at the joints. *Engl. Bot. t.* 788. *Hook. Scot. i. p.* 142. *Engl. Fl. v. ii. p.* 327.

Dry alpine rocks; on Craig Wreidhin, or Breiddin, Montgomeryshire; and about Edinburgh, Newburgh, Fifeshire, near Airly Castle, bridge of Earne, and Den of Balthayock, Perthshire, Scotland. *Fl.* June.

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♃.—One foot high, glabrous. *Leaves* lanceolate, acuminate. *Flowers* in a compact panicle, large, rose-coloured.

3. L. *alpína*, Linn. (*red alpine Campion*); glabrous, petals bifid, flowers corymboso-capitate, capsule 1-celled. *Engl. Bot. t.* 2254. *Hook. Scot. i. p.* 142. *Engl. Fl. v. ii. p.* 328.

Rocks on the summit of the Clova mountains, *G. Don. Fl.* June, July. ♃.—Five to 6 inches high, by no means viscid. *Leaves* lanceolate. *Flowers* rather small, rose-coloured.

H. 4. L. *dioica*, Linn. (*red or white Campion*); flowers diœcious, capsule of 1 cell. *Hook. Scot. i. p.* 142. *Engl. Fl. v. ii. p.* 328.

α. flowers red. *L. dioica, Engl. Bot. t.* 1579.—*L. diurna, Sibth. Ox.*—*L. sylvestris, Hop.*—*De Cand.*

β. flowers white. *Engl. Bot. t.* 1580.—*L. vespertina, Sibth. Ox.*

γ. flowers flesh-coloured, with stamen and pistils together. *Sm.*

Under hedges and in grass-fields, common. *Fl.* α. May, June.—β. γ. June—Sept. (*Sm.*) ♃.—One to two feet high, panicled above, pubescent, viscid in a slight degree about the joints of the stem. *Leaves* ovate, or ovato-lanceolate. *Calyx* in the anther-bearing flowers subcylindrical, in the fruit-bearing ones ovate. In β. the *petals* are pure white and the flowers fragrant in the evening. I quite agree with Sir James Smith that no permanent characteristic marks are to be found in the varieties here noticed.

20. Cerástium. *Linn.* Mouse-ear Chickweed.

G. 3 - 5 stam
C. 4 - 4 stam

Cal. of 5 leaves. *Pet.* 5, cloven. *Caps.* bursting at the top with 10 teeth (5 in *C. aquaticum.*)—*Nat. Ord.* Caryophylleæ. *Juss.*—Name; κερας, a *horn*, from the rather long and curved capsules of some species.

* *Petals not longer than the calyx.*

H. 1. C. *vulgátum*, Linn. (*broad-leaved Mouse-ear Chickweed*); hairy nearly erect viscid above, leaves ovate, bracteas herbaceous, petals as long as the calyx, flowers subcapitate, calyces oblong longer than their pedicels. *Engl. Bot. t.* 789. *Hook. Scot. i. p.* 142. *Engl. Fl. v. ii. p.* 330.—*C. viscosum, Huds.*—*With.*—*Curt. Lond. ed.* 1. *with a fig.*

Fields, pastures, and road-sides, common. *Fl.* April, June. ⊙.—Six to 10 inches high, branched below, dichotomous above. *Petals* narrow, bifid at the extremity. *Caps.* cylindrical, as long again as the *calyx*, curved upward.

2. C. *viscósum*, Linn. (*narrow-leaved Mouse-ear Chickweed*); hairy viscid spreading, leaves oblongo-lanceolate, bracteas membranaceous at the margin, flowers somewhat panicled, calyces oblong shorter than the pedicels. *Engl. Bot. t.* 790. *Hook. Scot. i. p.* 142. *Engl. Fl. v. ii. p.* 230.—*C. vulgatum, Huds.*—*With.*—*Curt. Lond. ed.* 1. *with a fig.*

Pastures and waste places, wall tops, &c. *Fl.* the whole summer. ♃.—Much resembling the last, but a larger, coarser, and spreading plant, with longer and narrower *leaves; calyces* shorter than their footstalks in general, especially when in fruit.

H. 3. C. *semidecándrum*, Linn. (*little Mouse-ear Chickweed*); hairy viscid suberect, leaves oblongo-ovate, bracteas membranaceous at the margin, flowers somewhat panicled, calyces ovate shorter than the pedicel, segments with broad membranaceous margins, petals slightly cloven, stam. 5. *Engl. Bot. t.* 1630. *Hook. Scot. i. p.* 143. *Engl. Fl. v. ii. p.* 331.—*C. pumilum, Curt.*

Dry waste places in sandy soil, on wall tops, &c. frequent. *Fl.* March, April. ⊙.—This displays itself, as Sir James E. Smith well observes, in early Spring, on every wall, and withers away before the *C. viscosum* begins to put forth its far less conspicuous blossoms. *Calyx-segments* acute, not "*obtuse*," longer than the *petals*. Reichenbach's figure (*Iconogr. p.* 181.) represents the petals deeply bifid, as in Smith's *var.* β., and the capsule scarcely longer than the calyx; whereas in *Engl. Bot.* it is figured twice as long and quite straight: which differences I find to exist in my own specimens.—Mr. W. Wilson thinks that this may be but an early flowering state of *S. viscosum.*

H. 4. C. *tetrándrum*, Curt. (*four-cleft Mouse-ear Chickweed*); "hairy and somewhat viscid, flowers four-cleft with four stamens, petals inversely heart-shaped shorter than the taper-pointed calyx which is nearly as long as the capsule." (*Sm.*) *Hook. Scot. i. p.* 143. *Engl. Fl. v. ii. p.* 332.—*Sagina cerastoides, Engl. Bot. t.* 166.

Waste ground, walls, and sandy places, especially near the sea. In Scotland (about Edinburgh.) On the East of England, (Yarmouth,) the South, (Sussex, *Mr. Borrer,*) and in Wales, *Mr. W. Wilson.* Howth, Ireland, *Mr. J. T. Mackay. Fl.* May, June. ⊙.—Sir James E. Smith seems to consider this plant peculiar to the neighbourhood of Edinburgh; but I have received specimens corresponding with the Edinburgh plant from the three most opposite points of England. At the request of my excellent friend Mr. Borrer, I have again considered the opinion I offered in *Fl. Scot.* that this could not be kept distinct from *C. semidecandrum.* The number of parts assuredly varies from 4—5, and in regard to all the other marks of distinction, it does appear to me that they rest on very slender grounds. The figure in *English Botany*, drawn from a cultivated specimen, only tends to mislead; and in *Engl. Flora* it is observed that the "taper-pointed calyx" is alone sufficient to keep it distinct from *C. semidecandrum;* whereas I find no difference in the calyx whatever; except perhaps that in *C. semidecandrum* there is a more distinctly membranaceous margin, as there is also to the floral leaves or bracteæ. In other respects I must confess that Mr. Borrer's own specimens of the 2 plants, do appear to me to be truly the same. See, too, Dr. Greville's remarks in *Flora Edinensis, p.* 103.

** *Petals longer than the calyx.*

H. 5. C. *arvénse*, Linn. (*Field Chickweed*); leaves linear-lanceolate more or less pubescent especially at the base, twice as long as the calyx. *Engl. Bot. t.* 93. *Hook. Scot. i. p.* 143. *Engl. Fl. v. ii. p.* 333.

Dry, sandy, and gravelly places. Less frequent in Scotland. *Fl.*

June, July. ♃.—*Stems* branched and decumbent at the base, a span long, slender. *Flowers* large, pure white, 2 or 3 on terminal stalks. *Capsule* scarcely longer than the *calyx.*

H. 6. C. *alpínum*, Linn. (*hairy alpine Chickweed*); subglabrous or clothed with long white soft silky hairs, leaves elliptical ovate, panicle dichotomous. *Engl. Bot. t.* 472. *Hook. Scot. i. p.* 144. *Engl. Fl. v. ii. p.* 334.—*C. latifolium, Lightf. Scot. v. i. p.* 242. *t.* 9.

Frequent on the Highland mountains of Scotland. Very rare in Wales: and not now to be found on Snowdon. *Fl.* July, August. ♃.—Much branched below and creeping, then erect, 3—5 inches high. *Flowers* large, handsome, white. *Petals* bifid at the point. Whole plant hoary.

7. C. *latifólium*, Linn. (*broad-leaved alpine Chickweed*); subglabrous or clothed with short rigid yellowish pubescence, leaves elliptical-ovate, branches mostly single-flowered. *Engl. Bot. t.* 473. *Hook. Scot. i. p.* 144. *Engl. Fl. v. ii. p.* 334.

Mountains of Wales and Scotland. Clogwyny Garnedd near Llanberris, *Dr. Richardson;* Snowdon, *Mr. W. Wilson*, but rare. Very rare on Ben Lomond; more frequent on Ben Nevis. *Fl.* July, Aug. ♃.—Never clothed with long white hairs; of a deeper green than *C. alpinum*, sometimes almost glabrous. The *stems* are dichotomous and bare of *leaves* below, and much buried under rocks and stones. *Flowers* solitary, rarely 2, terminal on the branches.—In the flower and fruit I agree with Mr. W. Wilson in thinking that there exists scarcely any difference between this and the preceding. In both, the *capsules* are broadly oblong, shining, nearly twice as long as the *calyx*, straight, opening with 10 *teeth.*

H. 8. C. *aquáticum*, Linn. (*Water Chickweed*); upper leaves cordato-ovate sessile, flowers solitary, fruit pendulous. *Engl. Bot. t.* 538. *Hook. Scot. i. p.* 144. *Engl. Fl. v. ii. p.* 335.

Sides of rivers and ditches. *Fl.* July. ♃.—*Stems* 1—2 feet long, branched and straggling. *Leaves* large, lower ones only on footstalks, with short scattered hairs on their surface and margins; whilst in *Stellaria nemorum*, (to which it is closely allied,) besides that the latter species has but 3 *styles*, the *leaves* are only ciliated on the margin, and appear when seen under the microscope to be very minutely dotted with raised points.—*Stems* viscid upwards. The *capsule* opens with 5 teeth or valves.

21. SPÉRGULA. *Linn.* Spurrey.

Cal. 5-leaved. *Pet.* 5, undivided. *Caps.* ovate, 5-celled, 5-valved.—*Nat. Ord.* CARYOPHYLLEÆ. *Juss.*—Name from *spargo*, to scatter; from the seeds being so widely dispersed.

H. 1. S. *arvénsis*, Linn. (*Corn Spurrey*); leaves whorled with minute membranaceous stipules at their base, stalk of the fruit reflexed, seeds more or less margined. *Engl. Bot. t.* 1535. *Hook. Scot. i. p.* 144. *Engl. Fl. v. ii. p.* 336.—*S. pentandra, Engl. Bot. t.* 1536.

Corn-fields, too frequent, especially in light stony soils. *Fl.* June, Aug. ⊙.—*Stems* 6—12 inches high, swollen at the joints. *Leaves* 1—2 inches long, narrow, linear, terete, glabrous or a little pubescent, in two fascicles from each joint, spreading in a whorled manner. *Panicle* of many *flowers*. *Pet.* white, ovate, rather longer than the *calyx*. *Stam.* often 5. *Seed* varying exceedingly in the width of its margin.—Cattle are fond of this plant, and it is an object of culture in Holland.

H. 2. S. *nodósa*, Linn. (*knotted Spurrey*); leaves subulate opposite glabrous connate, the lower ones sheathing, upper ones bearing clusters of young leaves, petals much longer than the calyx. *Engl. Bot. t.* 694. *Hook. Scot. i. p.* 145. *Engl. Fl. v. ii. p.* 338.

Wet, sandy, and marshy places, frequent. *Fl.* July, Aug. ♃.—Three to 4 inches high, branched and decumbent at the base, where the leaves are ¾ of an inch long, but they gradually become smaller upwards. *Flowers* large, white, 2—3 on the terminal branches, peduncled. Whole plant glabrous. *Cal.* nerveless.

3. S. *saginoídes*, Linn. (*Pearl-wort Spurrey*); glabrous, leaves subulate acute awnless, peduncles solitary very long, petals as long as the calyx, capsule twice as long. *Engl. Bot. t.* 2105. *Hook. Scot. i. p.* 145. *Engl. Fl. v. ii. p.* 338.

Ben Lawers, and other Highland mountains, frequent. *Fl.* June, July. ♃.—*Stems* many from the root, procumbent below, 2 or 3 inches tall. *Leaves* numerous and rather long at the base, shorter in remote pairs upon the stem. *Flower* drooping before and after expansion.

H. 4. S. *subuláta*, Swartz, (*awl-shaped Spurrey*); leaves subulate subciliated tipped with a bristly point, peduncles solitary very long, petals and capsule as long as the calyx. *Engl. Bot. t.* 1082. *Hook. Scot. i. p.* 145. *Engl. Fl. v. ii. p.* 339.—*S. saginoides, Curt.*—*S. laricina, Lightf.*—*Fl. Dan. t.* 858.—*Sagina procumbens, β. Linn.*

Dry, gravelly, and stony pastures. *Fl.* July, Aug. ♃.—This comes very near the last species, nor is it easy at all times to discriminate between them. Mr. W. Wilson cannot distinguish the Anglesea *S. subulata*, from the Ben Lawers *S. saginoides;* which latter perhaps is but an alpine *var.* of the former, though the original species of Linn. Both have very much the habit of *Sagina procumbens.*

(*See* Silene *and* Stellaria *in* ORD. TRIG. Adoxa *in* CL. VIII.)

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5 - B.

CLASS XI. DODECANDRIA. 12 *Stamens.*

ORD. I. MONOGYNIA. 1 *Style.*

1. ÁSARUM. *Linn.* Asarabacca.

Perianth single, 3-cleft, superior. *Caps.* 6-celled.—*Nat. Ord.* ARISTOLOCHIÆ. *Juss.*—Name, from α, *not*, and σειρα, *a band,* because it was rejected from the garlands of flowers employed by the ancients.

1. A. *europæum*, Linn. (*Asarabacca*); leaves binate reniform obtuse. *Engl. Bot. t.* 1083. *Hook. Scot. i. p.* 146. *Engl. Fl. v. ii. p.* 342.

Woods in the north of England; Lancashire and Westmoreland. Near Linlithgow, Scotland. *Fl.* May. ♃.—*Stem* very short. *Leaves* 2, petioled, shining; from the axil of these 2 leaves springs a solitary, rather large, drooping *flower*, upon a short footstalk, of a greenish brown colour and coriaceous substance. Segment of the *perianth* incurved. *Filaments* produced beyond the cells of the *anthers*, as in *Paris.*—*Roots* aromatic, and said to be purgative and emetic.

2. Lýthrum. *Linn.* Purple Loosestrife.

Cal. inferior, tubular, with 12 teeth, alternately smaller. *Petals* 6, inserted upon the calyx. *Capsule* oblong, 2-celled.—*Nat. Ord.* Lythrariæ. *Juss.*—Name, λυθρον, *blood*, it is said from the red colour of the flowers.

H. 1. L. *Salicária*, Linn. (*spiked purple-Loosestrife*); leaves opposite lanceolate cordate at the base, flowers in whorled leafy spikes with 12 stamens. *Engl. Bot. t.* 1061. *Hook. Scot. i. p.* 147. *Engl. Fl. v. ii. p.* 343.

flowers with long mid, & short styled Darwin

Sides of watery and marshy places, frequent. *Fl.* July. ♃.—Two to three feet high, erect. *Stems* 4-sided. *Spikes* very long, of beautiful, purple *flowers*. *Cal.* striated. *Petals* oblong, cuneiform. *Stam.* within the tube of the *calyx*, 6 long and 6 short ones.

2. L. *hyssopifólium*, Linn. (*Hyssop-leaved purple-Loosestrife*); leaves mostly alternate linear-lanceolate obtuse, flowers axillary solitary, stamens about 6. *Engl. Bot. t.* 292. *Engl. Fl. v. ii. p.* 344.

Moist and occasionally inundated places, chiefly in the east of England. *Fl.* Aug. ☉.—A humble annual, 4—6 inches high, with small axillary *flowers*.

ORD. II. DIGYNIA. 2 *Styles.*

3. Agrimónia. *Linn.* Agrimony.

Cal. turbinate, covered with hooked bristles, 5-cleft, inferior. *Pet.* 5, inserted upon the calyx. *Stam.* 7—20. *Fruit* of 2, small, indehiscent *capsules*, invested by the hardened calyx.—*Nat. Ord.* Rosaceæ. *Juss.*—Name; corrupted from *Argemone*, given by the Greeks to a plant supposed to cure the cataract in the eye, called αργημα.

Liver-wort

H. 1. A. *Eupatória*, Linn. (*common Agrimony*); cauline leaves interruptedly pinnate, terminal leaflet on a footstalk. *Engl. Bot. t.* 1335. *Hook. Scot. i. p.* 147. *Engl. Fl. v. ii. p.* 346.

Borders of fields, waste places and road sides. *Fl.* June, July. ♃.—Two feet high. *Leaflets* deeply serrated; intermediate smaller ones

3—5 cleft. *Flowers* yellow, on a long simple or branched spike, with a 3-fid bractea at their base.—Seeing how variable is the number of stamens in this plant, it would be better perhaps to place the Genus with its affinities in *Icosandria.*

ORD. III. TRIGYNIA. 3 *Styles.*

4. Reséda. *Linn.* Rocket.

Cal. of 1 piece, many-parted. *Petals* more or less divided and unequal. *Caps.* of 1 cell, opening at the top.—*Nat. Ord.* Resedaceæ. *De Cand.*—Name from *resedo,* to calm; from some supposed medical qualities.

H, 1. R. *Lutéola,* Linn. (*Dyer's Rocket, Yellow-weed,* or *Weld*)*;* leaves lanceolate undivided, calyx 4-partite. *Engl. Bot. t.* 320. *Hook. Scot. i. p.* 147. *Engl. Fl. v. ii. p.* 317.

Waste places; frequent in a chalky soil. *Fl.* July. ⊙.—Two—3 feet high, branched. *Racemes* long, of numerous yellowish *flowers,* with prominent *stamens. Nectary* large, green, crenate on the upper side of the *flower;* 3 of the petals 3-fid, segments linear: two loose petals entire. *Capsules* broad, depressed.—Used in dying woollen stuffs yellow.

B, 2. R. *lútea,* Linn. (*base Rocket, Wild Mignonette*)*;* leaves 3-fid or pinnatifid lower ones pinnated, calyx 6-partite, petals 6 very unequal. *Engl. Bot. t.* 321. *Hook. Scot. i. p.* 147. *Engl. Fl. v. ii. p.* 348.

Waste places and chalky hills. *Fl.* July, August. ⊙ or ♃.—*Leaves* very variable, some bipinnatifid. *Flowers* deeper yellow than the last. Two upper *petals* with 2 wing-like lobes, lateral ones unequally bifid, lower ones entire. *Capsule* oblong, wrinkled.

3. R. *fruticulósa,* Linn. (*shrubby base Rocket*)*;* leaves all pinnated waved glaucous, calyx 5-partite, petals 5 nearly equal trifid. *Jacq. Ic. Rar. t.* 474. *Sm. in Rees' Cycl.*

On an old hedge, between Marazion and Penzance, certainly wild; *Rev. J. S. Tozer,* 1829. Other stations, either for this or *R. alba,* have been communicated to me. Several places in Ireland; about Dublin, *Dr. Stokes and Mr. J. T. Mackay.* Between Cork and Glenmire, *Mr. Drummond.* Weston supra Mare, Somersetshire; *Mr. Joseph Woods.* Shore of Stokes Bay, near Gosport; *Rev. W. Stevens Bayton. Fl.* June. ♂ or ♃.—The following description was made by *Mr. Tozer* from recent specimens. "*Root* woody, tapering. *Stems* growing in a shrub-like manner from the root, more or less branched, wand-like, hollow, striated, leafy, 2—3 feet high. *Leaves* furnished with a minute tooth at the base on each side, pinnate, with a terminal leaflet, leaflets narrow, linear-lanceolate, decurrent, their margins frequently undulate, particularly the terminal one. *Racemes* terminal, erect, tapering, many-flowered. *Flowers* somewhat scattered below, but becoming extremely dense towards the top. *Bractea* linear, solitary, at the base of each simple flower-stalk, than which it is a little longer. *Cal.* inferior, of one leaf, deeply divided into 5, linear-lanceolate, spreading segments. *Petals* 5, nearly equal and similar, 3-cleft at the summit, the middle cleft being the narrowest, longer than the calyx pale yellowish white, with a slight tinge of green. *Filaments* about 11. *Anthers* at first of a brownish yellow colour, but gradually turning to a very pale buff yellow as they advance to maturity. *Germen* with about 4 angles, tumid. *Styles* 4, at first erect, afterwards spreading, permanent." Except that the *R. alba* of Linnæus is annual, I can perceive no real distinguishing character. *Mr. Borrer* informs me that there is a specimen of each in the Linnæan Herbarium, and the difference appears very slight. *R. alba* has shorter flower-stalks and thence more cylindrical *racemes*, and the terminal lobe of its *leaves* is more similar to the others, (less dilated than that of *R. fruticulosa*). I ought to observe that *Mr. Mackay* in his Cat. of Pl. of Ireland, gives Portmarnock-sands, as the station for *R. alba;* and considers it to be *naturalized.*

(*See* Euphorbia, *often placed here, in* Cl. XXI.)

Tetragynia, 4 *Styles.*

(*See* Tormentilla *in* Cl. XII.)

ORD. IV. DODECAGYNIA. 12 *Styles.*

5. Sempervívum. *Linn.* Houseleek.

Cal. 12-cleft. *Pet.* 12. *Capsules* 12.—*Nat. Ord.* Crassulaceæ. *De Cand.*—Name derived from *semper*, always, and *vivo*, to live, always green.

1. S. *tectórum*, Linn. (*common Houseleek*)*;* leaves ciliated, offsets spreading, petals entire and hairy at the margins. *Engl. Bot. t.* 1320. *Hook. Scot. i. p.* 149. *Engl. Fl. v. ii. p.* 350.

House-tops and on walls. *Fl.* July. ♃.—The *flowers* of this well-known and rustic medicinal plant, are no less beautiful than they are curious in their structure. The number of *stamens* is in reality 24, of which 12, inserted 1 at the base of each *petal*, are perfect; the rest alternating with the *petals*, small and abortive; *some* bearing *anthers*, open longitudinally and laterally, producing, instead of pollen, *abortive ovules!* others resemble a cuneate pointed scale, in the inside of which, upon a longitudinal receptacle, are likewise ranged abortive *ovules*, in the same manner as in the real germen;—thus exhibiting the most complete transition from stamens to germens, in the same individual flower. See the plate in *Fl. Lond. ed.* 2.

CLASS XII. ICOSANDRIA. 20 *or more stamens, placed on the calyx.*[*]

ORD. I. MONOGYNIA. 1 *Style.*

1. Prúnus. *Linn.* Plum and Cherry.

Cal. inferior, 5-cleft. *Pet.* 5. *Nut* of the *Drupe* with slightly prominent seams.—*Nat. Ord.* Rosaceæ. *Juss.*—Name *πϱουνη* in Greek, according to Theophrastus.

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[*] This Class comprises a most natural group, belonging to the Jussieuan Order, Rosaceæ.

* *Fruit covered with bloom. Young leaves convolute.*

H. 1. P. *doméstica*, Linn. (*wild Plum-tree*); peduncles solitary or two together, leaves ovato-lanceolate somewhat downy beneath, branches without spines. *Engl. Bot. t.* 1783. *Hook. Scot. i. p.* 150. *Engl. Fl. v. ii. p.* 355.

Woods and hedges occasionally, scarcely wild. *Fl.* May. ♄.—The original stock of the *plums* of our gardens, but probably itself a variety of the following.

2. P. *insitítia*, Linn. (*wild Bullace-tree;*) peduncles in pairs, leaves ovato-lanceolate downy beneath, branches ending in a spine. *Engl. Bot. t.* 841. *Hook. Scot. i. p.* 150. *Engl. Fl. v. ii. p.* 336.

Woods and hedges. *Fl.* May. ♄.—Small tree, having black, globular *fruit*, with a fine bloom, sometimes of a waxy yellow.

H. 3. P. *spinósa*, Linn. (*Black-thorn or Sloe*); peduncles (mostly) solitary, leaves elliptico-lanceolate somewhat downy beneath, branches very spinous. *Engl. Bot. t.* 842. *Hook. Scot. i. p.* 151. *Engl. Fl. v. ii. p.* 357.

Hedges and coppices, frequent. *Fl.* Apr. May. ♄.—It is difficult in a few words to distinguish this species from the last. It is much smaller in all its parts, and the branches are more crooked and spinous. In the *P. insititia*, the *leaves* are rather considerably advanced at the time of the blossoms appearing; in this, the *flowers* are generally past before the leaves appear. *Fruit* small, very austere; used to adulterate Port wine, as the *leaves* are to mix with tea.

** *Fruit without bloom. Young leaves conduplicate.*

H. 4. P. *Pádus*, Linn. (*Bird Cherry*); flowers in racemes, leaves deciduous obovate or oval glabrous with two glands at the summit of the footstalk. *Engl. Bot. t.* 1383. *Hook. Scot. i. p.* 150. *Engl. Fl. v. ii. p.* 354.—*Cerasus Padus, De Cand. Lindl.*

Woods and coppices, frequent; especially in the north. *Fl.* May. ♄. —A small *tree*, with acute *leaves*, doubly serrated. *Flowers* white. *Drupes* small, black; *nut* rugose.

5. P. *Cérasus*, Linn. (*wild Cherry*); flowers in nearly sessile umbels, leaves ovato-lanceolate somewhat downy beneath. *Engl. Bot. t.* 706. *Hook. Scot. i. p.* 150. *Engl. Fl. v. ii. p.* 354.—*Cerasus Avium, Mœnch. Lindl.*

Woods and hedges. *Fl.* May. ♄.—The origin of the garden *Cherry.*

(*See* Cratægus *in* Ord. Pentagynia.)

II. Pentagynia. 5 *Styles,* (*variable in most of the Genera.*)

2. Méspilus. *Linn.* Medlar.

Cal. segments superior, foliaceous. *Pet.* roundish. *Disk* large, secreting much honey. *Styles* 2—5, glabrous. *Fruit* turbinate, with the upper ends of the cells, which are bony, exposed. *Lindl,*

—*Nat. Ord.* ROSACEÆ. *Juss.*—Named from μεσπιλη, the Greek for *Medlar*.

H. 1. M. *germánica*, Linn. (*common Medlar*); leaves lanceolate a little downy, flowers solitary nearly sessile terminal, styles 5. *Sm.*—*Engl. Bot. t.* 1523. *Engl. Fl. v. ii. p.* 360.

Hedges, in Cheshire and Sussex. *Fl.* May. ♄.

3. CRATǼGUS. *Linn.* Hawthorn.

Cal. segments superior, acute. *Pet.* roundish. *Styles* 1—5. *Fruit* oval or round, concealing the upper end of the cells which are bony. *Lindl.*—NAT. ORD. ROSACEÆ, *Juss.*—Name from κρατος, *strength*, in allusion to the extreme hardness of the wood.

H. 1. C. *Oxyacántha*, Linn. (*Hawthorn, White-thorn or May*); spiny, leaves glabrous cut into 3 or 5 deeply serrated segments cuneate at the base, flowers corymbose, style 1 or 2. *Hook. Scot. i. p.* 151.—*Mespilus Oxyacantha, Gært.*—*Engl. Bot. t.* 2504. *Engl. Fl. v. ii. p.* 359.—*C. monogyna, Jacq.*

Woods and hedges. *Fl.* May, June. ♄.—Variable in the form of its *leaves*, in the downiness of the *cal.* and in the colour of the *flower* and *fruit*. The latter, usually red, *Mr. James Wilson* finds of a greenish orange on some bushes in Ayrshire. Few of our native plants present a more beautiful appearance than a well-grown tree of "Hawthorn hoar," with its massy foliage and innumerable white and fragrant blossoms.

> "From the *White-thorn* the May-flower shed
> Its dewy fragrance round our head."

The *fruit* or *haws* afford abundant food for small birds during hard winters.—The tree is the badge of the Highland Clan *Ogilvie*.

4. COTONEÁSTER. *Lindl.*

Flowers polygamous. *Cal.* turbinate, with 5 short teeth. *Pet.* 5, small, erect. *Stam.* erect, the length of the teeth of the cal. *Fruit* turbinate, with its nuts adhering to the side of the cal. but not cohering in the centre.—*Nat. Ord.* ROSACEÆ. *Juss.*—Named from *Cotoneum*, (κυδωνιον, *Gr.*) the *Quince*.

1. C. *vulgáris*, Lindl. (*common Cotoneaster*); leaves oval, calyx and peduncles glabrous. *Hook. in Fl. Lond. N. S. t.* 211. *Lindl. Syn. p.* 104. *Engl. Fl. v. iv. p.* 268. *Mespilus Cotoneaster, Linn.*

Limestone cliffs at Ormeshead, Caernarvonshire. *Mr. W. Wilson.*—*Fl.* July. ♄.

5. PÝRUS. *Linn.* Pear, Apple, and Service.

Cal. superior, of 5 segments. *Pet.* 5. *Styles* 2—5. *Fruit* fleshy (a *Pome*, or *apple*) with 5, cartilaginous, 2-seeded *cells*.—*Nat. Ord.* ROSACEÆ. *Juss.*—Name derived from the Celtic *peren*, a *pear*. In Greek απιος, from *api* Celtic; whence *apple* in Engl. *apfel*, Germ., *abhàl pradhaugh* in Gaelic.

H. 1. P. *commúnis*, Linn. (*wild Pear-tree*); leaves simple ovate, serrated, peduncles corymbose, fruit turbinate. *Engl. Bot. t.* 1784. *Engl. Fl. v. ii. p.* 361.

Woods and hedges, England. *Fl.* April, May. ♄.—Origin of our *pear.*

2. P. *Málus*, Linn. (*Crab-apple*); leaves ovate acute serrated, flowers in a sessile umbel, styles combined below, fruit globose. *Engl. Bot. t.* 179. *Hook. Scot. i. p.* 151. *Engl. Fl. v. ii. p.* 362.

Woods and hedges. *Fl.* May. ♄.—Origin of our *apple.* *Fruit* austere, of which verjuice is made.—The tree is the badge of the Clan *Lamont* in Scotland.

3. P. *torminális*, Sm. (*Wild Service-tree*); leaves ovate or cordate lobed and serrated, lower lobes spreading, peduncles corymbose. *Engl. Fl. v. ii. p.* 362.—*Cratægus torminalis, Linn.*—*Engl. Bot. t.* 298.

Woods and hedges, chiefly in the middle and south of England. *Fl.* April, May. ♄.—*Flowers* rather large, white. *Fruit* small, greenish brown, spotted.

4. P. *doméstica*, Sm. (*true Service-tree*); leaves pinnated downy beneath, leaflet serrated upwards, flowers panicled, fruit obovate. *Engl. Bot. t.* 350. *Engl. Fl. v. ii. p.* 363.—*Sorbus domestica, Linn.*

Mountainous parts of Cornwall and in Staffordshire, rare. *Fl.* May. ♄.—Habit of the following, but different in its *inflorescence* and the large size of its *fruit*, resembling a small pear, an inch long.

5. P. *aucupária*, Gærtn. (*Quicken-tree, Mountain-ash, or Rowan-tree*); leaves pinnated glabrous, leaflets serrated, flowers corymbose, fruit (small) globose. *Hook. Scot. i. p.* 151. *Engl. Fl. v. ii. p.* 364.—*Sorbus aucuparia, Engl. Bot. t.* 387.

Mountainous woods and hedges, frequent, especially in the Highlands of Scotland,

> "Where clings the *Rowan* to the rock,
> And through the foliage shows his head
> With narrow leaves and berries red."

Fl. May, June. ♄.—The wood is valued for its compactness, and the tree is often planted near houses and villages in the Highlands, to protect them from evil spirits. The *berries* are not unfrequently eaten, but are very austere.—This tree is the badge of the Clan *M'Lachlan.*

6. P. *pinnatífida*, Ehrh. (*bastard Mountain Ash*); leaves entire pinnatifid and pinnated white and downy beneath, flowers corymbose, fruit globose. *Engl. Bot. t.* 2331. *Engl. Fl. v. ii. p.* 365.—*Sorbus hybrida, Linn.*

Isle of Arran, the northern part; first found by *Mr. J. T. Mackay.* In Derenth wood, near Dartford; *Rev. Prof. Henslow.* *Fl.* May. ♄.—Some of the *leaves* of this plant so nearly resemble the following, that I fear (and Prof. Henslow is of the same opinion), it can only be considered a *variety.* I have specimens from Prof. Thomson and Mr. Smith of Swindridge-moor, gathered in the isle of Arran. It was omitted by mistake in *Fl. Scotica.*

7. P. *Ária*, Sm. (*white Beam-tree*); leaves ovate cut and ser-

rated, white and downy beneath, flowers corymbose, fruit globose. *Engl. Bot. t.* 1858. *Hook. Scot. i. p.* 152. *Engl. Fl. v. ii. p.* 367. —*Cratægus Aria, Linn.*

Mountainous woods, especially in a chalk or limestone country; England and Scotland. Cunnamara and Killarney, Ireland; *Mr. J. T. Mackay. Fl.* June. ♄.—*Leaves* often more or less cut at the margin. *Fruit* red.

6 SPIRÆA. *Linn.* Spiræa, Dropwort or Meadow-sweet.

Cal. inferior, 5-cleft, persistent. *Pet.* 5. *Capsules* 3-12, 1-celled, 2-valved, with few *seeds.*—*Nat. Ord.* ROSACEÆ. *Juss.*—Name, supposed to be the σπειρεια of Theophrastus.

H. 1. S. *salicifólia*, Linn. (*Willow-leaved Spiræa*); shrubby, leaves elliptico-lanceolate serrated glabrous, racemes terminal compound. *Engl. Bot. t.* 1468. *Hook. Scot. i. p.* 152. *Engl. Fl. v. ii. p.* 367.

Moist woods in several parts of the north of England, and in Scotland. *Fl.* July. ♄.—A small branching *shrub. Flowers* in crowded *racemes*, rose-coloured.

H. 2. S. *Filipéndula*, Linn. (*common Dropwort*); herbaceous, leaves interruptedly pinnated, all the leaflets uniform deeply cut and serrated, flowers paniculato-cymose. *Engl. Bot. t.* 284. *Hook. Scot. i. p.* 152. *Engl. Fl. v. ii. p.* 368.

Dry pastures, especially in a chalky or gravelly soil; rare in Scotland. Hills to the S.W. of Arthur's Seat, *Lightf. Fl.* July. ♃.—*Root* with rather long *tubers. Stem* a foot high, panicled above. *Leaflets* small, lanceolate, alternate ones not half their size. *Stipules* united, serrated. *Flowers* yellowish-white, tipped with rose-colour.

H. 3. S. *Ulmária*, Linn. (*Meadow-sweet, Queen of the Meadows*); herbaceous, leaves interruptedly pinnated serrated downy beneath, terminal leaflet largest and lobed, flowers in compound (and as it were proliferous) cymes. *Engl. Bot. t.* 960. *Hook. Scot. i. p.* 152. *Engl. Fl. v. ii. p.* 368.

Meadows, and banks of ponds and ditches, frequent. *Fl.* July. ♃.—*Stems* 3—4 feet high, branched upward. *Leaflets* ovate, acuminate, very large, especially the terminal (generally) 3-lobed one, alternate ones minute. *Flowers* yellowish-white, numerous, sweet-scented.

III 7. RÓSA. *Linn.* Rose.

Cal. urn-shaped, fleshy, contracted at the orifice, terminating in 5 segments. *Pet.* 5. *Pericarps* (or *Carpels*), numerous, bristly, fixed to the inside of the calyx.*—*Nat. Ord.* ROSACEÆ. *Juss.*—Name from the Celtic, *Rhos* (from *rhodd*, red; whence also the Greek name for a *rose*, Ροδον, was probably derived.)—The following species are characterized and described by *Mr. Borrer.*

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* All the British species are prickly *shrubs*, with pinnate leaves. *Inflorescence* ternate: primordial *peduncle* continuous; lateral ones with a joint near the base, accompanied by two bracteas, and capable of producing there another pair of flowers, and so on; but rarely, in British *Rosæ*, beyond a third series; the larger bunches being composed of independent fascicles, which terminate alternate, often leafless, ramifications. Such compound bunches are produced on strong shoots only; on the feebler ramuli the flowers grow three together; on the weakest, solitary. The primordial fruit has the shortest stalk, is the largest, and is very generally more produced at the base, and less at the apex, than the subordinate ones.—*R. spinosissima* is the only British species in which

The Rose is absolutely wanting in the S. hemisphere.
but thrives well under cultivation.

* *Shoots setigerous, prickles scarcely curved.*

1. *Bracteas large.*

1. R. *Dicksóni*, Lindl. (*Dickson's Rose*); "shoots setigerous," prickles scattered slender subulate, leaflets oval coarsely and irregularly serrated hoary, sparingly glandulose beneath, calyx-segments long simple, fruit ovato-urceolate. *Lindl. in Trans. of Hort. Soc. v. vii. p.* 224.—*R. Dicksoniana, ejusd. Syn.*

Ireland: discovered by *Mr. James Drummond.* (*Lindley*). *Fl.* June. ♄. Upright, with divaricated flexuose *branches*; *bark* blood-red, with a slight cæsious bloom; young shoots pale green. *Prickles*, some binate below the leaves, the rest scattered thinly, except on the lower part of the root-shoots, and there not very numerous; larger ones with a small flat dilation at the base, and sometimes slightly curved. *Leaflets* 5 or 7, large, oval, grey with fine pubescence on both sides; *glands* beneath few and inconspicuous; serratures occasionally simple, but mostly with a few irregular gashes: *petioles* downy, with or without very minute prickles, with a few glands, and large gland-fringed pale *stipules*; the *leaves* next the flowers usually changed into broad concave *bracteas*, some pointed, and some with a terminal leaflet. *Peduncles* setose, thickened and fleshy at the summit. *Calyx-segments* copiously setose at the back, slender and downy upwards, with a leafy point; a small linear-lanceolate pinna is found on one or two of them. *Petals* rather small, shorter than the calyx, deep pink. *Styles* hairy, included. *Stigmas* depressed. *Fruit* rather large, orange-red, not always, if usually, without a few strong setæ; its shape ovate, with a more or less lengthened neck;* crowned with the persistent, variously spreading, or connivent calyx-segments.—I doubt not the propriety of arranging this species with the *R. cinnamomea*, with which it agrees in the habit of the shrub and of the prickles; although the specimens and the one living plant which I have the opportunity to examine, exhibit no setæ on the stem or branches. It approaches *R. pomifera*, (*R. villosa, Lindl.*) in the general appearance of its foliage, and in the incrassated summit of the peduncle, which ripens with the fruit: but the large growth of that species, its pale bark and large prickles, its compound calyx-segments, and almost prickly crimson fruit, are only some of the points in which it differs.

2. R. *cinnamómea*, Linn. (*Cinnamon Rose*); shoots setigerous, prickles scattered slender subulate, leaflets lanceolato-oblong simply serrated, downy and glandulose beneath, calyx-segments long simple, fruit small ovate. *Engl. Bot. t.* 2388. (*excl. the fruit.*) *Woods in*

I have never observed a secondary flower. *R. rubella* and *R. involuta* rarely produce a complete set of three.

Obs. The *glands* of *Rosæ* are rarely quite sessile. When the stalk obviously exceeds in length the diameter of the gland it supports, I call it, after Woods, a *seta*. It is only by bearing a gland that a strong *seta* is distinguished from a *prickle*, and a feeble one from a *hair*.

* In the descriptions of the species, I apply the term *urceolate* to a fruit broad at the base and having a lengthened neck.

Trans. of Linn. Soc. v. xii. p. 175. *Lindl. Ros. p.* 28. *Engl. Fl. v. ii. p.* 372. *Linn. Sp. Pl. ed.* 2. *p.* 703.—*R. acuminata, Swartz.* In the wood at Aketon Pasture, near Pontefract, Yorkshire; *Mr. Salisbury, in Engl. Bot.* Probably not a native. Mr. Sabine has sought for it there in vain. At Birkhill, Galston, Ayrshire, apparently wild, *Miss Brown. Fl.* May, and irregularly through the summer. ♄.—*Root* creeping widely and throwing up numerous suckers. *Shrub* about 5 feet high; *branches* ascending; *bark* blood-red with an evanescent cæsious bloom. *Prickles* on the stem very numerous towards the lower part, horizontal or rather deflexed, very unequal in size, the largest somewhat compressed; on the branches found only in infrastipular pairs, and often slightly curved. *Leaves* grey-green, downy beneath and slightly so above, without glands, except on the edges of the pale, broadish, pointed *stipules*, and a very few occasionally on the upper side of the downy *petiole;* serratures coarse, simple, and mostly regular, but now and then with a single gash or a small intermediate tooth. *Bracteæ* broad, concave, pointed. *Peduncle* not thickened upwards. *Segments of the calyx* longer than the *petals*, simple, or with an almost filiform pinna on one or two; naked on the back, except a very few glands along the middle, very downy at the edges and towards the dilated point, persistent, connivent on the *fruit*, which is small, ovate, sometimes almost globular, when ripe pulpy, of a coral-red with a slight cesious bloom. I never saw setæ, either on the fruit or on the peduncle. The flower is delicately fragrant.—Mr. Lindley has learned from the Linnæan herbarium that this is the *R. cinnamomea, Sp. Pl.* Linnæus probably joined with it, as the same species, *R. majalis, Retz* (and *Lindl.*), which was called *R. cinnamomea* by the late Dr. Swartz, whose *R. cinerea*, and *R. turbinella*, appear to be slight *vars.* of the same. Fries also regards *R. majalis* as the type of *R. cinnamomea, Linn.*, and adds to it, as a *var.*, our plant, which is not a native of Sweden. The Swedish fruit, figured in *Engl. Bot.* must, therefore, belong to *R. majalis.* It would not be easy to assign to each its proper synonymy. *R. cinnamomea* seems to be the southern, *R. majalis* the northern plant. Whether the latter is truly distinct, I cannot decide. Its humble stature, (about two feet,) seems its principal characteristic: for the stipules vary in width, and that of the leaves can scarcely be depended on; and although we find its branches usually more prickly, Wahlenberg found both them and the petioles mostly unarmed in Swedish Lapland. No other Rose exists in that region. It retains in our gardens the lively red which attracted, on the banks of the Tenglio, the notice of Maupertuis, from whom Thomson borrows an allusion to it in a beautiful passage of his *Winter.** The flowers of *R. cinnamomea* are of a less vivid purplish pink and darker than the colour given in *Engl. Bot.*

2. *Bracteas small or wanting.*

3. R. *rubélla*, Sm. (*red-fruited dwarf Rose*); stem and branches densely setigerous throughout, prickles few slender nearly straight, leaflets simply serrated naked, their disk eglandulose, fruit oblong or urceolate. *Engl. Bot. t.* 2521, and fruit *t.* 2601. *Woods in Trans. of Linn. Soc. v. xii. p.* 177. *Lindl. Ros. p* 40. *Hook. Scot. i. p.* 152. *Engl. Fl. v. ii. p.* 374.—*R. alpina θ. Ser. in De Cand.*

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* "And, fringed with *Roses*, Tenglio rolls his stream."

Rare. Sandy sea-coast of Northumberland, sparingly; *Mr. Winch.* Banks of Dee about Abergeldy, *Anderson. Fl.* May. ♄.—*Root* creeping, stoloniferous. *Shrub* 2—4 feet high, slightly arched, with spreading much divided branches, copiously covered with setæ, among which are scattered a few slender prickles, straight or very nearly so, and slightly deflexed. *Leaves* without hairs on any part; with *glands, setæ,* and sometimes *prickles* on the petioles and midribs, and a glandular fringe to the *stipules,* which are somewhat widened and divaricated at the points; *leaflets* 7, 9, 11, full-green above, paler beneath, elliptical or roundish, not acuminate, the serratures quite simple or slightly gashed, gland-tipped whilst young. *Flowers* solitary, sometimes two together, with a small narrow bractea; *peduncle,* and usually the base of the calyx-tube, setose; the *segments* simple, setose, and glandulose, sometimes slender, sometimes dilated at the point, shorter than the *petals.* These are cream-coloured, not rarely tinged with pink, often tipped externally with crimson, in some cultivated *vars.* entirely red. Head of *stigmas* prominent, very hairy. *Fruit* pendulous, bright-red, firm not pulpy when ripe, usually of a short oval shape tapering equally to each end, sometimes, especially when two flowers occur together, flattened at the base and truly urceolate; the *peduncle* in both cases gradually thickened upwards, fleshy and coloured. Persistent *calyx-segments* mostly spreading, affixed to a prominent ring, like which their base is often fleshy and coloured. The fragrance of the flowers has a peculiar acidity mingled with the common scent of the rose.—In Mr. Forster's doubtful plant from Irish seed, mentioned by Woods, the peduncle is bare of setæ, the calyx without glands, and with a few narrow pinnæ.—Exclusive of the plant just mentioned, one form only of *R. rubella* has been found wild with us; but several *vars.* exist in our gardens. One of these (*β. melanocarpa, Lindl.?*) has the leaflets small and distant, and small urceolate fruit of a deep dull blood-purple, almost black, on a less incrassated stalk. All the other *vars.* with which I am acquainted, differ from every form of *R. spinosissima* by their bright red fruit: from most of them, the abundant setæ and the few and uniform larger prickles offer a sufficient distinction. The species is more nearly allied to *R. alpina* and *R. stricta.* The former, indeed, has neither setæ nor prickles, except a few near the ground on radical shoots, and its fruit is more elongated. The latter is but unsatisfactorily marked by the denudated points of the ramuli and the larger somewhat glaucous leaves. Its larger prickles are more rare than in *R. rubella,* but a few are found on vigorous parts of the shrub; and the difference in general habit is but trifling. Still I agree with Mr. Lindley in believing the two distinct.

H. 4. R. *spinosíssima,* Linn. (*Burnet-leaved Rose*); prickles crowded unequal mostly straight, intermixed with setæ, leaflets small simply serrated their disk eglandulose, calyx simple, fruit nearly globular. *Engl. Bot. t.* 187. *Woods, l. c. p.* 178. *Lindl. Ros. p.* 50. *Hook. Scot. i. p.* 154. *Engl. Fl. v. ii. p.* 375.—*R. pimpinellifolia, Linn.—Sabine.—Ser. in De Cand. Prod.*

β. pilosa; "very dwarf, leaves acute hairy on the under surface." *Lindl. Syn. p.* 100.

Heaths, &c. chiefly on sand and chalk; most common towards the sea. *β.* Ireland.—*Fl.* May. ♄.—Increasing fast by suckers. *Shrub* upright, 1—3 feet high; occasionally still more dwarfish on sandy sea-coasts, and taller when drawn up in hedges; branches spreading, tortuous, much divided; lowermost often lengthened and trailing. *Prickles* tawny, horizontal or deflexed, very numerous on every part, although old bushes are sometimes denudated; extremely unequal in size; the larger not rarely compressed, and somewhat falcate,* the smaller, and often all, straight, gradually dwindling down to setæ. *Leaflets* rigid, most frequently 7, but varying in number from 5 to 11, sometimes even to 15, and in figure from orbicular and subretuse to ovate and acute, the more numerous usually the longer, and the more finely serrated; they are mostly flat, their hue full green or somewhat glaucous, paler beneath; serratures simple, generally broad, very rarely irregular; petioles usually glandulose, and with a few straight prickles, sometimes naked, sometimes with a few chaffy scales, rarely downy or hairy; stipules fringed with glands, narrow at the base, dilated, leafy and divaricated at the points. *Flowers* numerous, solitary. *Peduncle* gradually thickened upward, becoming fleshy and coloured with the fruit, naked or glandulose, sometimes setose, more rarely prickly. *Cal.* segments shorter than the petals, acuminate, entire, or with a few gland-tipped teeth, and occasionally a minute *pinna* or two. *Petals* cream-coloured, with or without crimson blotches on the outside, sometimes suffused with pink, rarely full pink or deeper red. *Stigmas* somewhat depressed, pale or red, mixed with hairs. *Fruit* varying from the size of a large cherry to that of a large pea, globose, or more often spheroidal, in some *vars.* obovate, in others ovate and urceolate; dark purple or blood-red, or full black; firm, not pulpy when ripe, of a sweet taste, and with a purple juice: the spreading or erect persistent segments of the calyx are affixed to a prominent ring, and often somewhat fleshy at the base. The flowers are more or less cupped in different *vars.* and for the most part larger than in the *Engl. Bot.* figure. Their fragrance is similar to that of *R. rubella*, but in some *vars.* the scent becomes disagreeable, as in *R. arvensis*, when they are fully expanded.—β. is a very remarkable *var.* Its serratures are rather irregular; its *peduncles* densely setose and prickly; its *cal.-tube* turbinate, naked except at the base; the segments setose, fully pinnate. The shape of the tube induces a suspicion of monstrosity. I have seen but one specimen, and, I leave the plant where Lindley has placed it. Under all its other variations this most beautiful species is readily recognised by its peculiar arms and foliage. The *tall Scotch Rose* of the gardens, *R. spinosissima* γ. *Woods*, (ε. *Hort. Kew.*) may possibly be distinct. Its prickles are less unequal and rather thinly scattered, the larger much compressed but straight. The habit, too, both of the bush and of the foliage is different, approaching in a slight degree to that of *R. hibernica.* Sussex specimens have been mistaken for it, but I have no reason to believe it really British. Mr. Sabine, in *Trans. of Hort. Soc.*, regards it as the true *R. spinosissima, Linn.* Fries observes that the plant intended by Linnæus when he gave to *R. spin.* a place in his *Fl. Suec.* was the Swedish *R. cinnamomea*, (*R. majalis, Lindl.*) but that part of the synonymy and the whole of the description belong to our *R. spin.* which is not a native of Sweden. See also *Engl. Fl. v. ii. p.* 377. *R. myriacantha, De Cand.* is made by Seringe, a *var.* of our *R. spin.*; but its glandulose leaves seem an essential difference, and their serratures, in all that I have seen, are compound.

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* "*Falcate*, bent as a scythe; *uncinate*, hooked, like a claw or sickle." *Woods.*

5. R. *hibérnica*, Sm. (*Irish Rose*); shoots and ramuli sparingly setigerous, prickles scattered unequal, larger somewhat falcate, leaflets simply serrated hairy beneath, their disk eglandulose, calyx pinnate, fruit nearly globular. *Engl. Bot. t.* 2196. *Woods, l. c. p.* 222. *Lindl. Ros. p.* 82. *Engl. Fl. v. ii. p.* 393.

Counties of Derry and Down, particularly near Belfast harbour; *Mr. Templeton. Fl.* "June—Nov." *Smith.* ♄.—*Root* creeping, stoloniferous. *Shrub* 3—6 feet high, dense, with ascending, much divided, reddish brown branches. Larger prickles slightly curved, smaller subulate and straight; numerous on root-shoots, few on the ramuli; a few setæ occur on both. *Leaflets* closely set, 5 or 7, rarely 9, ovate, or of a rounder outline, acute; naked and somewhat glaucous above, hairy beneath, chiefly on the ribs and veins; serratures sharp, simple, occasionally rather unequal; *petioles* hairy, with falcate prickles, sometimes wanting, rarely any setæ or glands; *stipules* broad, smooth, slightly serrated, with tapering, slightly spreading points; those next the flowers enlarged. *Flowers* rather small, mostly solitary or two together, sometimes in considerable fascicles and then accompanied by ovato-lanceolate bracteas. *Peduncle* cylindrical, naked as well as the *calyx*, the *segments* of which are downy within and at the edges only; shorter than the pale pink *petals*, with slightly leafy points and a few pairs of shortish, linear-lanceolate, entire, gland-tipped pinnæ. *Styles* included, hairy; *stigmas* somewhat prominent. *Fruit* nearly globular or urceolate, but short, blood-red, crowned with the erect or spreading, persistent segments of the calyx.—A satisfactorily distinct species, intermediate in habit and in the size of its leaves between *R. spinosissima* and *R. collina*, β. *Woods*; but in its fruit, and in the presence of setæ, nearer to the former.

6. R. *Wilsóni*, (*Wilson's Rose*); prickles crowded unequal straight intermixed with setæ, leaflets simply serrated hairy, their disk eglandulose, calyx simple, fruit ovato-urceolate.

On a declivity by the Menai, near Bangor, *Mr. W. Wilson. Fl.* June, July, ♄.—About 3 feet high, of slender habit, well furnished with very unequal straight prickles and glandular setæ. *Leaflets* 7 or 9, 5 towards the flowers, ovate, somewhat cordate, blunt, (not acuminate,) simply serrated, slightly hairy on both sides, the ribs beneath rather more so, and the midrib beset with glands, like the petiole, which bears also a few small prickles, which are often falcate or almost uncinate; *stipules* copiously fringed with glands, widened upwards, pointed and somewhat divaricate. *Flowers* usually 3 together, bracteate; the primordial bractea a pair of enlarged stipules with a terminal leaflet, the others simple, ovate or lanceolate, acute. *Peduncle* setose. *Calyx*-tube broadly ovate (almost globular), with a short neck, sparingly setose, sometimes naked; *segments* copiously setose and glandulose, shorter than the petals, with a slightly dilated point and occasionally a capillary pinna. *Petals* rather large, pink. *Styles* included, hairy; *stigmas* forming a round protuberant mass. *Fruit* scarlet.—In describing this remarkable Rose, which I have never seen alive, I have availed myself of the remarks of its accurate discoverer. He observes further that it is as plentifully supplied with prickles as *R. spinosissima*, and that the foliage soon acquires a reddish tinge, which gives to the bush a remarkable and somewhat elegant aspect. On the flowering twigs I find the prickles scattered, small, slightly curved, and richly tinged, like the twigs themselves, and the flower-stalks and calyx, with purple. Whatever might be supposed from the *spec. char.*, this plant has no resemblance, in its appearance, to *R. spinosissima*, but decidedly approaches the Roses of the *Centifoliæ* group. Its leaves are somewhat longer than those of *R. Sabini*, β. the plantwhich it most resembles in calyx. Can it be a hybrid production? Mr. Wilson finds several bushes of it, which discourages such an idea.

7. R. *involúta*, Sm. (*prickly unexpanded Rose*); prickles crowded unequal straight, intermixed with setæ, leaflets doubly serrated hairy, glandulose beneath, stem dwarfish. *Engl. Bot. t.* 2068. *and fruit t.* 2601. *Woods, l. c. p.* 183. *Lindl. Ros. p.* 56. *Hook. Scot. i. p.* 154. *Engl. Fl. v. ii. p.* 377.

Hebrides, and Western Highlands of Scotland.—Near Meggarnie in Glen Lyon; *Rev. Dr. Stuart.* Isla, Morvern, and elsewhere in the Highlands; *Rev. Dr. Walker.** Isle of Arran; *Mr. G. Don. Fl.* June. ♄.—Spreading widely by suckers. *Shrub* scarcely exceeding 3 feet high, upright, with spreading branches. *Prickles* horizontal or slightly deflexed. *Leaflets* 5—9, elliptical, naked above, or very nearly so, hairy and glandulose on the ribs and veins beneath; *petioles* with straight prickles, glands, and a few hairs. *Flowers* mostly solitary. *Peduncle* somewhat thickened and fleshy upwards. *Calyx* setose, *segments* rather shorter than the pale pink *petals*, usually a little dilated at the point, and rarely bearing a slender pinna or two, persistent, and more or less spreading on the fruit. *Fruit* dark red, setose, globular or somewhat urceolate.—Intermediate, in the size and habit of its leaves, between *R. spinosissima*, to which it is attached by Seringe, and *R. Sabini*, of which Mr. Winch still thinks it a *var.* The doubly serrated and glandulose leaves distinguish it from the former; the dwarfish growth from its nearer affinity the latter; from all the known *vars.* but one, of which, it further differs by its crowded arms. Its serratures too are less regularly compound, being often toothed on the outer margin only, and not constantly even there. The petals do not expand widely, but are only occasionally involute.

8. R. *Sabíni*, Woods, (*Sabine's Rose*); shoots and ramuli setigerous, prickles scattered unequal straight or nearly so, leaflets doubly serrated hairy, glandulose beneath, calyx somewhat pinnate. *Woods, l. c. p.* 188. *Lindl. Ros. p.* 59. *Hook. Scot. i. p.* 155. *Engl. Fl. v. ii. p.* 380. *Engl. Bot. Suppl. t.* 2594.

β. prickles more numerous, leaves very hairy, calyx almost simple. *Lindl. Ros. p.* 59.—*R. Doniana, Woods, l. c. p.* 185. *Engl. Fl. v. ii. p.* 378. *Engl. Bot. Suppl. t.* 2601.

γ. larger prickles falcate, calyx almost simple. *R. gracilis, Woods, l. c. p.* 186. *Engl. Fl. v. ii. p.* 379. *R. villosa, Engl. Bot. t.* 583, *fig. only.*†

Scotland and N. of England.—β. Sussex, and near Edinburgh.—Warwickshire, *Rev. W. Bree.*—γ. Near Darlington, *Mr. Robson.* Pooley Bridge, Cumberland, and near Keswick, *Woods.* Between Pooley and

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* I have specimens from a plant communicated by Dr. Walker to the late Mr. Brodie, of Brodie, which I suspect to belong to *R. Sabini* β.

† The Rose contemplated in the description was *R. pomifera.* See *Engl. Fl.*

Lowther, *Mr. Robertson. Fl.* June. ♄.—5—8 feet high, (in γ. 10 feet, *Woods*;) upright; branches reddish brown, spreading, somewhat drooping, much divided. *Prickles* numerous on the stem, rather thinly scattered on the ramuli, very unequal in size; nearly straight in α and β.; the larger considerably curved in γ. *Leaflets* 7 or 9, elliptical or ovate, acute but rarely acuminate, sharply and doubly serrated, edged with glands; hairy in various degrees, and thence more or less green or hoary above, beneath paler and more hairy, and sprinkled on the ribs and veins with glands; petioles also hairy and glandulose, with small straight prickles, and often setose; *stipules* rather broad, somewhat dilated upwards, pointed and divaricate. *Flowers* solitary or in threes; in larger bunches more frequently in α. than in β. *Peduncle* cylindrical, setose, as is mostly the *calyx-tube*; *segments* hairy, setose, and glandulose, variously but not copiously pinnate, with a long usually leafy point, nearly as long as the petals. *Petals* pink, often beautifully mottled, or white. *Styles* included, hairy; *stigmas* varying in prominence. *Fruit* dark red, globular or somewhat urceolate; persistent *cal.-segments* erect, more or less spreading, or recurved.—The *leaves* of α. are somewhat greener than those of the other *vars.* its calyx is usually more compound, its fruit more generally urceolate, and it increases less by the roots. Mr. Don's Clova plant, to which the name *Doniana* was intended to be given, has an almost simple calyx like β., but agrees more nearly with α. in foliage and fruit.—In γ. the calyx is simple, or has merely an almost capillary wing or two in Mr. Woods' specimens, but in some of Mr. Robertson's it is nearly as compound as in α. Its larger prickles, as well as those on the petioles, are somewhat falcate, but those of α. are not invariably quite straight. and this increase of curvature can scarcely be held a sufficient *spec. char.* I am, however, but very imperfectly acquainted with the plant.—I have a specimen from the garden of the Horticultural Society, labelled *R. Doniana, horrida,* with leaves like those of β. and most like to it in calyx, but with the prickles on the ramuli almost as much crowded as those of *R. ferox.* I have neglected to ascertain whence it was procured, nor am I informed as to its stature.

** *Shoots mostly without setæ.*

1. *Leaves glandulose.*

a. *Prickles uniform or nearly so; setæ none or very few.*

9. R. *villósa,* Linn. (*villous Rose*); prickles uniform nearly straight, leaflets doubly serrated downy glandulose, calyx slightly pinnate, root-shoots straight. *Woods, l. c. p.* 189. *Engl. Fl. v. ii. p.* 381. *Linn. Herb.—R. mollis, Engl. Bot. t.* 2459. *Lindl. Syn. p.* 100.—*R. mollissima, Willd.—R. heterophylla, Woods, l. c. p.* 195.—*R. pulchella, Woods, l. c. p.* 196?

Scotland, Wales, N. of England. Ireland, *Mr. J. T. Mackay. Fl.* June, July. ♄.—*Root* stoloniferous. *Shoots* upright or ascending, not arched; *bush* sometimes 6—8 feet high, but usually of more humble growth; branches irregular, ascending, variously tinged with purple, and cæsious in various degrees whilst young. *Prickles* not numerous, subulate from a dilated base, sometimes very slightly curved, often in pairs at the base of the petioles. *Leaflets* 5 or 7, ovate or elliptical, not acuminate, sometimes subretuse, hoary with down and glandulose, most plentifully so beneath;

primary serratures often rather distant, especially towards the base of the leaflet, with their points frequently somewhat divaricate, and the secondary ones sometimes scarcely more than a fringe of glands; *petioles* and *stipules** downy and glandulose; the former mostly with feeble straight prickles; the latter linear, scarcely dilated towards the points; those nearest the flowers coalescing into broadly ovate, elliptical, or sometimes lanceolate, pointed *bracteas*. *Flowers* 1—3 together on the ramuli, often in large bunches on strong shoots. *Peduncle* and *calyx-tube* cæsious, setose, more rarely naked. *Calyx-segments* downy, setose, and glandulose, simple, or more generally sparingly pinnate, very often leafy at the point, about as long as the *petals*, persistent, connivent, erect or somewhat spreading on the fruit. *Petals* generally of a vivid full pink or deeper red, often fringed with distant glands, sometimes white with crimson blotches on the outside. *Styles* included; *stigmas* prominent. *Fruit* mostly pendulous; broadly elliptical or nearly globose, lateral ones often urceolate; when ripe, purplish-red approaching to crimson, with a cæsious bloom. The turpentine scent perceptible in most of the glandulose-leaved roses is powerful in this species.—The *Engl. Bot.* figure represents a stunted specimen.—If the trivial name *villosa* be assigned to the *Apple Rose* of our gardens, *R. pomifera*, "Herm." (*R. villosa*, *Lindl.*†), that of *mollissima*, first given, it seems, by Borkhausen, and belonging to this species rather than to *R. tomentosa*, claims priority to that of *mollis*. —The specimens from which Mr. Woods described his *R. heterophylla*, are remarkable for the disproportionately large size of the upper leaves, and their petioles are almost entirely without prickles; but plants brought from the station at Collington, and probably from the same roots, although still retaining the latter peculiarity, have in one year assumed the usual appearance of *R. villosa*.—Possibly *R. pulchella*, *Woods*, ought to be referred to *R. tomentosa*. In both species the *petals* of dark-flowered *vars.* have not unusually a slight glandular fringe. Indeed Fries regards such a fringe as essential to his *R. mollissima*, which includes the two. With us it certainly is not constant. When Fries says that *R. mollis*, *Sm.*, removed to a garden, became in the third year *R. tomentosa*, *Sm.*, I suspect some error; although I would by no means positively assert that the two species are *ab origine* distinct.—*R. tomentosa* γ. *resinosa*, *Lindl. Ros.*, transferred to *R. mollis in Syn. Brit. Fl.*, has, in our specimens, foliage most like that of *R. tomentosa*, but a nearly simple calyx.

10. R. *tomentósa*, Sm. (*downy-leaved Rose*); prickles mostly uniform straight or curved, leaflets doubly serrated downy glandulose, calyx copiously pinnate. *Engl. Bot. t.* 990. *Woods l. c. p.* 197. *Engl. Fl. v. ii. p.* 383. *Lindl. Syn. p.* 100. *Hook. in Fl. Lond. N. Ser. t.* 124. *Hook. Scot. i. p.* 156. *Pers.—De Cand.—Ser.*

α. *R. scabriuscula*, *Winch*, *Geog. Distr. ed.* 2. *p.* 45. *Engl. Bot. t.* 1896. (fig. only ?) *Woods*, *l. c. p.* 193.

Hedges and thickets, not unfrequent.—β. About Newcastle. *Winch.*

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* Mr. Wilson finds the *bracteas*, in Welsh plants, almost naked, and the *stipules* much less downy than the *leaves*.

† And apparently *R. villosa*, *Linn. Sp. Pl.* Linnæus, however, undoubtedly included *R. villosa*, *Woods*, and probably *R. tomentosa*, in his idea of *R. villosa*.

Fl. June, July. ♄.—A most variable species, best distinguished from *R. villosa* by the copiously pinnate *calyx-segments,* which generally, but not invariably, spread widely on the fruit. The *fruit* too is mostly of a more slender figure; and the *leaflets* are usually more narrowly elliptical and more pointed. These vary much in quantity of *glands* and in denseness of pubescence; their upper surface being often very hoary, and sometimes, although rarely, quite naked. The peduncle and calyx-tube are seldom without numerous *setæ.* Some of the *vars.* throw up suckers freely; others sparingly; others not at all.—The living plants which I have had an opportunity of studying present the following variations:

1. *Shoots* arched, *fruit* oblong, *prickles* straight.
2. *Shoots* and *fruit* the same, *prickles* falcate.
3. *Shoots* arched, *fruit* urceolate, *prickles* straight.
4. *Shoots* and *fruit* the same, *prickles* falcate.
5. *Shoots* and *fruit* the same, *prickles* uncinate.
6. *Shoots* straight, *fruit* oblong, *prickles* all nearly straight.
7. *Shoots* and *fruit* the same, *prickles* of ramuli falcate, the rest straight.

The third of these forms, (*μ. Woods.*) is a very remarkable one, and bids fair to assume the rank of a species when better understood. It is of humble growth, with long straggling tortuous branches, the ramuli of a pale hue, lanceolate hoary *leaflets,* deciduous calyx-segments, small urceolate fruit, upright, and usually in considerable bunches. It is a Sussex plant. Of all Woods' *vars.* his *o. incana* is the only one which I venture to separate from this species. It will be found under *R. cæsia.*—If *R. Sherardi, Davies,* and *Smith, Engl. Fl. v. iv. p.* 269, (*R. subglobosa, v. ii. p.* 384,) be distinct, we must look to its falcate prickles for a character, for the shape both of the leaflets and of the fruit is too evidently inconstant.—*R. sylvestris, Lindl. Syn. p.* 100, has also falcate prickles. In a specimen from the garden of the Horticultural Society, its leaflets are almost naked above, with serratures less compound and more acuminate than usual in *R. tomentosa.* Its ramuli, as in several *vars.*, are flexuose and coloured; and its shoots are described as growing erect.—*R. scabriuscula, Winch,* has, in plants from Newcastle, long and straggling, much arched or drooping branches, remarkably oblong leaflets, its calyx-segments rather less copiously pinnate, and scarcely remaining on the ripe fruit, which is of a darker red than the usual scarlet hue of *R. tomentosa,* to which, however, the plant seems to have more affinity than to *R. villosa.*—*R. tomentosa γ. Woods* has a peculiar aspect. I almost think it a species, but know too little about it to pronounce it such. It more resembles, I think, *R. canina β.* (*sarmentacea*) than *R. tomentosa;* but the bush is, if I mistake not, upright, with few and slightly falcate prickles, and its unripe fruit is globular and remarkably large. It has no pubescence but on the upper side of the petioles, and no glands but a few on the petioles and the edges of the stipules and the imperfectly-compound serratures. I have a specimen gathered by Mr. Woods at Weston-super-mare, and referred to this *var.*, which has similar leaves, but richly setose peduncles and calyx, like the common *R. tomentosa.* The forms of *R. tomentosa,* with arched shoots and falcate prickles, have so much the habit of various forms of *R. canina,* that doubts have naturally arisen whether even these two species are truly distinct. The fruit in this species is pulpy as in that, and has a similar flavour. The prickles are less dilated at the base.

11. R. *inodóra*, Fries, (*slightly-scented Briar*); prickles uniform uncinate, leaves doubly serrated hairy mostly glandulose beneath, calyx-segments closely pinnate mostly deciduous, ramuli without setæ, fruit elliptical or nearly globular. *Fries*, " *Fl. Halland.*"—*Engl. Bot. Suppl.* 2610. *ad calcem. Ser. in De Cand.—R. Borreri, Woods, l. c. p.* 210. *Engl. Fl. v. ii. p.* 388.—*R. dumetorum, Engl. Bot. t.* 2579.—*R. rubiginosa, var. inodora, Lindl. Ros. p.* 88. *Fl. Lond. N. S. t.* 117.—*Wahl.—Fries, Nov. ed.* 2.

β. *Woods.* Leaves hairy on both sides.

γ. Leaves more copiously glandulose, calyx-segments elongated persistent.

Thickets and hedges, chiefly in the S. of England.—β. near Edinburgh and elsewhere.—γ. Glen Goy, Inverness-shire.—Near Newcastle, *Mr. Robertson. Fl.* June, July. ♄.—Sparingly stoloniferous. 6—8 feet high, stout, arched, with vaguely divided, ascending, drooping branches. *Prickles* not very numerous, all strongly hooked, their base dilated: flowering *ramuli* not rarely unarmed. *Leaflets* flat, rarely carinate, broadly ovate, or sometimes narrower, scarcely acuminate; upper surface darkish green, mostly shining and inconspicuously hairy, under side paler and more hairy, sprinkled, perhaps always, although often sparingly and inconspicuously, with minute *glands* which give out a slight turpentine fragrance, such as also fringe the stipules and the truly double serratures; *petioles* downy and glandulose, with small hooked *prickles. Flowers*, as in all the neighbouring species, solitary, 3 together, or in larger bunches, according to the vigour of the bush and the part on which they grow. *Peduncle* mostly shorter than the ovate pointed *bracteas*, beset with feeble *setæ* or with soft pale *hairs*, more rarely naked. *Calyx-tube* mostly naked, sometimes sparingly setose; *segments* about as long as the petals, usually naked at the back, with a leafy point and closely set, shortish, lanceolate, often compound *pinnæ*, fringed with gland-tipped teeth. *Petals* pale pink, moderate in size and in expansion. *Styles* included, hairy; *stigmas* depressed. *Fruit* varying in length, scarlet, soft and pulpy, and with the same taste as that of *R. canina* when ripe.—The figure in *Fl. Lond.* represents a small but not uncommon state of the species.—Mr. Woods has favoured me with a specimen from Weston-super-mare with leaves much like those of *R. sepium*, but with the characteristic calyx of *R. inodora*.—γ. approaches *R. rubiginosa*, and has even a few setaceous prickles and setæ on the stem and ramuli. Its *fruit* is somewhat longer than is usual in the common plant, but not pear-shaped. Its *leaves* rather more fragrant, but the scent is not that of the *Sweet-Briar*. In character it comes near to *R. tomentosa*. The *setæ* on the peduncle are like those in *R. inodora* α.

12. R. *micrántha*, Smith, (*small-flowered Sweet-Briar*); prickles uniform uncinate, leaflets doubly serrated hairy, glandulose beneath, calyx-segments and pinnæ elongated deciduous, fruit small elliptical and ovate, ramuli sparingly setigerous. *Engl. Bot. t.* 2490. *Woods, l. c. p.* 209. *Engl. Fl. v. ii. p.* 387. (*not De Cand.*)—*R. rubiginosa* β. *Lindl. Ros. p.* 87.

Open bushy commons, thickets, and hedges, in the S. of England. Abundant on chalk and gravel in some parts of Sussex and Surrey. Essex, *Mr. Forster.* South of Ireland, *Mr. Drummond.* *Fl.* June, July. ♄—Scarcely stoloniferous, 5—8 feet high, of loose straggling growth, with arched shoots and spreading branches. *Prickles* strongly hooked, not numerous, nor intermixed with straight subulate ones, but a few strictly setaceous, and a few real *setæ*, often occur immediately under the inflorescence; occasionally the flowering ramuli, and sometimes the points of leafy shoots, are altogether unarmed. *Leaflets* broadly elliptical or ovate, of a rather pale green and somewhat shining and slightly hairy above; beneath more hairy and sprinkled copiously, as are the petioles and usually the *stipules*, with rusty glands diffusing a fragrance similar to that of the *Sweet-Briar*, but less powerful, and sometimes, according to Woods, intermixed with a turpentine odour. *Peduncle* setose. *Calyx-tube* naked, or with a few *setæ*, those at its base not in general larger than the others;* its segments, with a long leafy point and narrow lanceolate pinnæ fringed with gland-pointed teeth. *Petals* small, shorter than the calyx, pale pink. *Styles* included, not hairy;† *stigmas* slightly protuberant. *Fruit* coral-red, or scarlet, pulpy when ripe, and flavoured like that of *R. canina:* the primordial bluntly elliptical, never pear-shaped: the secondary ovate with a slight neck, often somewhat oblique. The *flowers* are for the most part neatly cupped, as in *R. systyla,* and delicately fragrant.—It is difficult to distinguish this plant satisfactorily by characters from *R. inodora;* yet it differs considerably in habit, its ramification being more tufted, although it sends out long arched shoots, and also in its lengthened calyx-segments and its small fruit. It is in fact more likely to be united to *R. rubiginosa* by botanists who separate those two, yet deny to this the rank of a species. The justice of its claim to such rank I am far from asserting positively: yet its uniform and much less numerous prickles, its small pulpy fruits, all rounded at the base, and its deciduous calyx-segments, seem constant characters; and its smaller and paler flowers and arched straggling shoots, distinguish it from *R. rubiginosa* at first sight.

b. *Prickles various, intermixed with setæ.*

13. R. *rubiginósa*, Linn. (*true Sweet-Briar*); prickles numerous, larger uncinate, smaller subulate, leaflets doubly serrated hairy, glandulose beneath, mostly rounded at the base, calyx-segments and pinnæ elongated persistent, primordial fruit pear-shaped. *Engl. Bot. t.* 991. *Engl. Fl. v. ii. p.* 385.—*R. rubiginosa α. Lindl. Ros. p.* 86. *Hook. Scot. i. p.* 157.—*De Cand.*—*Wahl.*—*Fries.*—*R. Eglanteria, Woods, l. c. p.* 206.—*Huds.*—*R. suavifolia, Lightf.*

Open bushy places, chiefly in the S. of England. Abundant in some places on chalk; more rare in moist hedges. About Edinburgh, Scotland, and Passage in Ireland. *Fl.* June, July. ♄.—Stoloniferous; 4—6 feet high, compact and densely branched in general, and the shoots seldom arched. *Prickles* numerous; the large uncinate ones on the stem and branches mixed irregularly with abundance of smaller, some slightly

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* I have gathered at Box-Hill, Surrey, stunted specimens with very much the habit of *R. sepium,* with the setæ on that part stronger, and leaflets smaller and narrowed at the base.

† I cannot justly estimate the value of this character, to which I have not attended in the living plant. Lindley remarks that they are "often without pubescence;" and I find them so in all my dried specimens.

curved, and some straight, subulate and setaceous, and some real *setæ*, which last, however, are not always present; the flowering twigs are occasionally unarmed, but have more usually binate uncinate *prickles* near the base of the *leaves*, and others scattered, varying in size and curvature. *Leaflets* flat, or often concave, pale bright green, more or less hairy, ovate, or broadly elliptical, or often almost round, occasionally narrower and more pointed, but scarcely tapering to the base; sprinkled copiously beneath, on the edges and on the petioles with fragrant viscid *glands*, which are found also on the backs and edges of the *stipules*. *Peduncles* and often the calyx-tube beset with *setæ*, of which those at the base of the latter are usually larger; segments setose and glandulose, with a lengthened leafy point and narrowly lanceolate *pinnæ*, spreading almost at right angles with gland-pointed teeth. *Petals* deep pink, equal to the calyx or rather shorter. *Styles* included, slightly hairy; *stigma* scarcely protuberant. *Fruit* changing first to yellow then to orange-red or scarlet, its substance thin, scarcely pulpy and almost insipid when ripe; when in bunches the primordial is pear-shaped, the secondary obovate, but less tapering at the base; the others elliptical. The fragrance of the leaves is compared to that of ripe apples.—β. of *Woods*, which I have from himself, has leaves smaller, but of the usual form, and differs chiefly in wanting the larger bristles at the base of the calyx-tube.—Afzelius, in his *De Rosis Suecanis Tentamen*,* argues, as does Woods, for the adoption of the name *Eglanteria* for this species. Fries also thinks that if that name be restored it should be assigned rather to this species than to *R. lutea*, " licet e Mant. p. 399, palam est quam intellexit Linnæus." He remarks too that Linnæus long referred *R. rubiginosa* to *R. canina*, mentioning it in *It. Scan. p.* 277, as belonging, on account of its red flowers, to *R. canina*, not to *R. Eglanteria*, notwithstanding its fragrant leaves. See Sir J. E. Smith's opinion in *Engl. Fl.*

14. R. *sépium*, " Thuil." (*small-leaved Sweet-Briar*); prickles numerous, larger curved, smaller subulate, leaflets small doubly serrated hairy acute at each end, glandulose beneath, calyx-segments and pinnæ elongated, (fruit ovate?) *Lindl. Syn. p.* 101. *De Cand. Fl. Fr. ed.* 3. *v. vi. p.* 538.

Near Bridport, Warwickshire. *Rev. W. T. Bree. Fl.* June. ♄.—A densely branched *bush*, about 3 feet high, distinguished in the common French plant by long slender flexuose twigs with large nearly straight, or falcate, or even uncinate, *prickles*, and small distant lanceolate *leaflets*, mostly 7, acute (mostly, but not invariably,) at the base as well as at the point. The *petioles* are glandulose, sometimes hairy and bear a few straightish or curved *prickles*. The *peduncles* and *calyx-tube* are usually naked, but occasionally both, or the former only, bear setæ, which are larger on the base of tube, although less remarkably than in *R. rubiginosa*. The calyx-segments are variously glandulose, and the narrowly lanceolate *pinnæ* issue more or less exactly at right angles, and have little sharp divaricated gland-tipped teeth. The *styles* are included and very slightly hairy.—In Mr. Bree's plant, which I have seen only under cultivation, I find but little difference, except that the ramuli are less flexuose, and the leaflets not remarkably distant, rather larger, and more hairy, almost shaggy beneath. The *pinnæ* of the *calyx* are less divaricated and have glands on the edges only, (as they have in a specimen gathered by Mr. Woods at Troyes, which, also, has larger leaflets). The *flowers* are white, clustered or solitary, according, as usual, to their situation on the bush. The *fruit* is scarlet, ovate, (rounded at the base,) when solitary: I have no note of its shape in the bunches.* The *prickles*, which have a few *setæ* among them, are numerous, the larger ones strongly hooked. Whether setæ exist in the foreign plants I know not; I find none in my limited number of specimens. Desvaux, *Journn. de Bot. for* 1813. *v. ii. p.* 116, assigns to this species 9 *vars.*, and describes 5 of them as wanting glands, or bearing them only on the petioles. He expresses a strong persuasion that both *R. sepium* and *R. rubiginosa* pass into *R. canina.*

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* Translated in Sims and König's *Annals of Botany, v. ii.*

2. *Leaves eglandulose.*

a. *Styles distinct, included or nearly so.*

15. R. *canína*, Linn. (*common Dog-Rose*); prickles uniform hooked, leaves naked or slightly hairy, their disk eglandulose, calyx-segments fully pinnate deciduous, styles not united, shoots assurgent. *α. δ. ε. Lindl. Ros. p.* 98. (excl. some syns.) *Hook. Scot. i. p.* 157.—*Fries.*†

Thickets, hedges, &c. very common. *Fl.* June, July. ♃.—The British Roses answering to the character given above may be subdivided as follows:

α. Leaflets naked, carinate; serratures simple. *R. canina, Woods. l. c. p.* 223. *Engl. Fl. v. ii. p.* 394.
  a. green. *α. Woods. R. canina, Engl. Bot. t.* 992.
  b. grey. *β. Woods.*
β. sarmentacea. Leaflets naked, carinate; serratures compound. *R. sarmentacea, Woods, l. c. p.* 213. *Engl. Bot. Suppl. t.* 2595. *R. canina, Fl. Lond.*
  a. green. *β. Woods. R. sarmentacea, Swartz?*
  b. grey. *α. Woods. R. glaucophylla, Winch.*
γ. surculosa. Leaflets naked, flat; serratures simple. *R. surculosa, Woods, l. c. p.* 228. *R. venosa, Swartz? R. canina, β. Engl. Fl.*
  a. green. *β. Woods.*
  b. grey. *α. Woods.*
δ. dumetorum. Leaflets more or less hairy, flat.
  a. hairy on both sides. *R. dumetorum,* "*Thuil.*" *Woods, l. c. p.* 217. *Engl. Fl. v. ii. p.* 392. *Engl. Bot. Suppl. t.* 2610.
  [*b.* hairy beneath only. *R. collina, Jacq.* from the younger Jacquin. I have not seen it British.]
ε. Forsteri. Leaflets more or less hairy, not flat. *R. collina, Woods, l. c. p.* 219. *R. Forsteri, Engl. Fl. v. ii. p.* 392.
  a. concave, green. *γ. Woods. R. campestris, Swartz.*
  b. carinate, grey.

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* De Candolle describes the fruit of the French plant as longer than that of *R. rubiginosa.*

† *R. canina* of Fries must surely be this species, although he opposes its *late and coriaceous* fruit to the *early subcarnose* fruit of his *R. coriifolia;* explaining the term "*coriaceus*" by "*durissimus subexsuccus,*" and "*carnosus*" by "*durus quidem, sed mollior et succosior.*" Now all our *vars.* of *R. canina* have the ripe fruit soft and pulpy, such, I presume, as he terms "*fructus pulposus.*"

1. hairy beneath only. β. *Woods. R. Forsteri, Engl. Bot. Suppl. t.* 2611.

2. hairy on both sides.

The forms above mentioned are not so defined, but that various connecting variations may be found. In all of them, the *ramification* varies in denseness, and the *shoots* are more or less arched or erect according to the vigour of the plant: the *prickles* are not very numerous, hooked in various degrees and compressed, and their base considerably dilated: the *leaflets* vary in width; their serratures, although scarcely compound except in β., are mostly irregular in size: the *bracteas* vary in size: the *peduncle* and *calyx-tube* are most commonly naked, their setæ, when present, feeble and not numerous; the *calycine segments* are free from *glands*, or more or less copiously fringed with them: the *styles* are hairy; the *fruit* is coral red, or more scarlet, soft and pulpy when ripe, with a pleasant somewhat acid taste. The principal *vars.*, as I now assume them to be, are excellently described by Woods, who, the better to bring them into notice,* distinguished them as species. I shall add a few remarks on each.—α. grows 6—10 feet high. It has usually lanceolate *leaflets*, not rounded at the base, with a small, often twisted point, and rather small acuminate serratures; *petioles* with almost straight prickles, and mostly, not always, a few glands, but mostly not always bare of hairs, except a few on the channelled upper side; *peduncle* and *calyx-tube* generally naked, the latter more rarely setose than the former; cal.-segments loosely pinnate, the *pinnæ* entire or toothed; the *disk* of the receptacle sometimes very prominent; *styles* included; *stigmas* depressed; *fruit* oblong, generally tapering to each end, especially in the modification *a;* which is distinguished by its shining bright green leaves. *R. Swartzii, Ser. in De Cand. Prod.*, from Fries, now reduced by Fries himself to *R. canina*, seems to be this form, although the styles are described as exserted. *R. senticosa, Ach.* received from Dr. Swartz, appears to be a form of this *var.* with large subglobose *fruit*. Woods describes his *var.* ε. with a subglobose *calyx-tube*.—β. *sarmentacea* resembles α. in growth and habit, in *styles* and *stigmas*, in the *disk* of the receptacle, and in the variations of the *cal.-segments*. In its extreme state it appears well distinguished by its double serratures, the points of which are often divaricate; but although often really double, they are sometimes only apparently so from a fringe of glands; and every gradation in this respect is to be met with between it and α. The *leaves* vary much in width in different specimens, and the *fruit* in size. It is mostly oblong, but Mr. Woods found it nearly globular in his *var.* δ, a N. of England plant of large growth. In the green-leaved modification, *b.*, I once observed a few glands on the under side of the leaflets. In β. γ. and δ. the peduncle is sometimes naked, has sometimes soft hairs, and sometimes feeble *setæ*.—λ. *surculosa* approaches δ. in aspect, from the flatness of its leaves, and, usually their rounded figure. It has serratures rather coarse;

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* See his remarks in *Tr. of Linn. Soc. v. xii. p.* 170.—Lindley well observes, "Surely it is not surprising that this most common species of the genus, whose fruit is scarcely ripe before it is devoured by small birds, and deposited by them in every possible variety of soil and situation, should frequently assume features considerably different from its more general appearance." He has however separated as *species*, in his *Syn. Brit. Fl.*, several forms which he had made *vars.* in his *Monograph*.

prickles on the *petioles* considerably hooked; *pinnæ* of the *calyx* rather closely set and usually entire; *styles* somewhat protruded, with a round head of *stigmas*; *fruit* short, elliptical, or ovate and somewhat urceolate. The green-leaved modification, *a.*, is of humbler growth than the other, which rivals the larger forms of α. in size. This *var.* and α. seem less inclined to spread by suckers than the other *vars.* of the species.—The British form of δ. *dumetorum* is often of humble and feeble growth, but vigorous plants also occur, 6—8 feet high. It has much general resemblance to *R. inodora.* It has somewhat small but uncinate *prickles*, rather numerous for this species; *leaflets* for the most part broadly oval, the terminal one sometimes almost cordate, their serratures coarse, their hue dull green but shining, the hairs on the upper surface being appressed and very inconspicuous; *calyx-pinnæ* varying in closeness; *styles* nearly or quite included; *stigmas* in a round head; *fruit* elliptical, varying in length. Plants agreeing with this *var.* in pubescence, but in other respects more like α., sometimes occur. The first form, *a.*, of ε. *Forsteri*, is connected by intermediate variations with the other form, *b.*, on the one side, and with δ. on the other. In its proper state it has *leaflets* pale green and concave, as those of *R. rubiginosa* often are; *serratures* shallow, sometimes indistinctly compound; *petioles* hairy or downy, more or less glandulose; *peduncle* mostly naked, sometimes hairy, very rarely feebly setose. Its *prickles* are as in δ.—The next form, *b.* 1., but for the existence of intermediate plants, might well be held a species. Its growth is mostly stout and dense; *prickles* less dilated at the base and less hooked than in the other *vars.*; *foliage* with a strong glaucous tinge; serratures coarse, often unequal; *petioles* downy, usually, not always, without glands; *peduncle* and *calyx-tube* naked; *cal.-segments* rather closely pinnate; *styles* included; *stigmas* varying in prominence, considerably hairy; *fruit* elliptical, often so short as to be almost globular.—The remaining form, *b.* 2., has highly cæsious twigs and more pubescent grey leaves. Its *flowers* are more deeply coloured than is usual in the species. In other respects it approaches nearest to δ. and to ε. *a*, although its leaflets are carinate. From the tints of the foliage and flowers it has a general resemblance to *R. cæsia.* This form appears rare. I find it at Henfield. Of the other forms, *var.* γ. has been least noticed, but it is not unfrequent in Sussex and Surrey, and Mr. Forster finds it in Essex.—I have Yorkshire and Northumberland specimens, from Mr. Robertson, as *R. sepium, Swartz*,* which have altogether the appearance of ε. *b.* 1. but leaves with some hairs on both sides, and the head of *stigmas* prominent and very woolly, as in *R. bractescens.* Some of them have a few *setæ* on the peduncles. Should δ. and ε. be finally regarded as a species distinct from *R. canina*, *collina* seems to be the trivial name it should bear, since *R. collina, Jacq.* can scarcely be specifically distinguished. The figure in *Fl. Austr. t.* 197, is much like ε. *b.* 1., but the plant sent by the younger Jacquin most resembles a luxuriant state of δ.—Mr. Wilson finds a Rose, about Warrington, with glaucescent *leaves* somewhat hairy on both sides, more or less doubly serrated, and fringed, as well as the *calyx*, with glands. This resembles both β. *sarmentacea* and ε. *Forsteri. b.* If the species be divided, it must go with the former to *R. canina*, not to *R. collina.* Lindley is probably correct in regarding as a feeble state of *R. canina* the *R. nuda, Woods, l. c. p.* 205, described from a single specimen gathered between Ambleside and Clappersgate. The peculiarity which induced the author to propose it as a species is the "union of straight prickles, unmixed with setæ, with smooth leaves furnished only with simple serratures." The fruit is described as globose; the petioles, as devoid of prickles and down, sometimes with, sometimes without, glands. *R. systyla, γ. Monsoniæ, Lindl. Ros. p.* 111. found by Miss Munro, at Watford, Herts, is probably a hybrid production from intermixture of a wild with a garden Rose. It has more resemblance to *R. dumetorum*, (*R. canina*, δ.) than to *R. systyla, Woods*, but is very different from both in habit, being of humble growth with stiff upright branches like *R. gallica*, which it resembles also in the size and shape of its roundish orange-red fruit, and in the thick stiff peduncle plentifully sprinkled with glands or short setæ, and in some degree in the calyx, and in the narrowly oblong outline and thickish substance of the leaflets. Sometimes, not always, it has small setaceous prickles on the ramuli. The *stigmas* are sessile at the orifice of the tube, and have but few hairs among them. It flowers abundantly, with petals of a beautiful glowing red, and larger than in any other British Rose, except another supposed hybrid, of which some account will be found under R. *arvensis*.

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* Afterwards named by Swartz himself *sevincola.* Fries refers it to his own *R. coriifolia.*

16. R. *bractéscens*, Woods, (*bracteated Dog-Rose*); "calyx-tube globose, prickles hooked, leaflets simply serrated downy beneath, bracteas overtopping the fruit." *Woods, l. c. p.* 216. *Engl. Fl. v. ii. p.* 391.—*R. dumetorum, Lindl. Syn. p.* 102.—*R. coriifolia, Fries, Nov. ed. ii. p.* 147?

About Ulverston, Lancashire; and a *var.* with nearly smooth stipules and glandulose calyx-segments, at Ambleside, Westmoreland. *Woods. Fl.* ——— ♄.—Woods describes the *shrub* as 6 or 7 feet high, with diffuse branches, *prickles* more numerous, more slender and less curved than usual in the group to which it belongs; *petioles* downy, without *glands*, rarely without prickles; *leaflets* elliptical, hairy above as well as downy beneath; *peduncle* bare, or more rarely with few and feeble setæ; *styles* included; head of *stigmas* conical; *fruit* globose. He chiefly depends on the shape of the *fruit*, the mass of very woolly *styles*, and the immense *bracteas*, to distinguish it as a species. I leave it for future consideration, having seen only specimens kindly communicated by Mr. Woods, which agree entirely, as far as they go, with his description; but seem very closely allied to his *R. collina*, (*R. canina* ε. *b.*) If the reference to Fries be correct, the separating of the plant from *R. canina* is sanctioned by the opinion of another eminently original observer, and one by no means liable to be accused of an undue propensity to multiply species.

17. R. *cǽsia*, Sm. (*glaucous Dog Rose*); prickles uniform uncinate, leaflets doubly serrated downy, their disk eglandulose, calyx sparingly pinnate, styles not united, shoots assurgent. *Engl. Bot. t.* 2367. *Woods, l. c. p.* 212. *Engl. Fl. v. ii. p.* 389. *Lindl. Syn. p.* 102. *R. canina. G. Hook. Scot. i. p.* 157.

β. *incana*. Prickles strongly uncinate from a much lengthened base, fruit large oblong. *R. tomentosa o. incana, Woods, l. c. p.* 203.

Highland valleys of Perthshire and Argyleshire.—Northumberland and Durham. *Mr. Robertson.*—β. sent from Scotland to Mr. Sabine, by *the late Mr. G. Don. Fl.* June, July. ♄.—Stoloniferous. About 5 feet high, upright, densely branched. *Leaves* elliptical, pointed, downy beneath, very slightly so or quite smooth above; serratures sometimes regularly double, sometimes imperfectly so; *petioles* glandulose, and usually downy or hairy; *stipules* fringed with glands, downy or almost naked; those next to the flowers changed into broad, elliptical, pointed bracteas. *Flowers* usually solitary. *Peduncle* naked, or sparingly setose. *Calyx-tube* elliptical, naked, in all that I have seen, and, like the leaves and young twigs, very glaucous; *segments* about as long as the petals, broad at the base, sometimes glandulose at the back, sometimes bare of glands in every part and only downy at the edges, somewhat leafy at the point, and bearing a few narrowly lanceolate *pinnæ*, which are either entire or toothed with *glands. Petals* uniform pink, or white. *Styles* nearly or quite included, hairy; *stigmas* a round prominent mass. *Fruit* ovato-urceolate, scarlet, soft and pulpy when ripe, before which it loses the segments of the calyx. I have seen the fruit only in a plant from the neighbourhood of Newcastle, which is, under cultivation, much less beautiful than this species, as it occurs in the Highlands. Its growth is less dense, its flowers fewer and of a paler pink.—I retain this species until opportunities offer themselves of further investigation. Mr. Robertson observes that *R. collina, Woods*, readily passes into it, and Mr. Woods himself has remarked how difficult it is to characterise the two.—β. *incana* is about 8 feet high, the *leaves* very glaucous and slightly downy above, densely so beneath, as are also the *petioles* and the backs of the *stipules*, on which, and on the edges of the serratures and of the *calyx*, are sprinkled small *glands;* and a few such are sometimes found on the veins on the under side of the leaf, near the point. The *peduncle* is beset with soft hairs, not setæ. The *calyx-segments* bare at the back, very woolly at the edges, spread widely, or even become recurved after flowering, and remain until the fruit is almost ripe; their *pinnæ* are broad and short. The *fruit* is bluntly oblong, almost equally large at each end, not unlike in size and shape to an Olive. The dilation at the base of the strongly hooked prickles is very remarkably elongated.—The taller growth, and the differences in the *prickles*, the *calyx-pinnæ*, and the *fruit*, scarcely prove this plant a species; but it is a remarkable [illegible], with more affinity, I think, to *R. cæsia*, than to *R. tomentosa.*

b. *Styles united in a column; mostly exserted.*

18. R. *systýla*, Woods, (*close-styled Dog Rose*); prickles uniform uncinate, leaves simply serrated, their disk eglandulose, calyx-segments sparingly pinnate deciduous, styles united hairless, shoots assurgent. *Woods, l. c. p.* 230. *Engl. Fl. v. ii. p.* 395. (*excl. from both the foreign syns.*) *Hook. Scot. i. p.* 159. *Lindl. Ros. p.* 111. (*excl. the foreign syns. except R. dibracteata, De Cand. Fl. Fr. ed.* 3. *v. vi. p.* 537.)—*R. collina, Engl. Bot. t.* 1895. (*excl. syn.*)

β. *Woods.* Leaves shining, naked on both sides, except the mid-rib.
γ. Leaves glaucescent, naked on both sides, except the mid-rib.

Thickets, hedges, &c. Sussex.—Essex, Middlesex, *Mr. Forster.*

Berkshire, *Mr. Bicheno.* Kent, *Mr. Woods.*—Nidrie, and hills to the N. of Milngaire, *Hopkirk.* Near Cork, *Mr. Drummond.*—β. Henfield, Sussex. I have similar specimens from Fort-Augustus.—γ. Newtimber, Sussex. *Fl.* June, July. ♄.—Scarcely stoloniferous. Often 10 or 12 feet high, vaguely branched, and with strong arched shoots. *Prickles* on the stem not much dilated in general at the base, compressed, and often much enlarged in the lower part so as to be almost triangular with a straight point, or a short, hooked beak; those on the ramuli usually in substipular pairs. *Leaflets* more generally 5 than 7, carinate, lanceolate or elliptical, bright green and shining, or rarely opaque above, paler and slightly hairy beneath; *serratures* tolerably regular; *petioles* downy, with curved *prickles*, with or without *glands*. *Peduncle* rather long, with numerous glands or short setæ, a few of which are rarely found on the tube of the calyx. *Calyx-segments* broad and short with a tapering point, and linear-lanceolate *pinnæ*, entire, or with a few gland-tipped teeth. *Petals* longer than the calyx, pink, sometimes white. Column of *styles* usually protruded, but variable in length; occasionally quite included; *stigmas* forming a conical head. *Fruit* oblong, or sometimes globular, pulpy and orange-red when ripe, flavoured like that of R. *arvensis.*—β. is of feebler growth, with shoots and leaves beautifully tinged with purple, and flowers more deeply coloured than those of α.—γ. is about 3 feet high, of a stiff habit, with large and very numerous prickles; *peduncles* with somewhat longer setæ; *fruit* small, globular, setose.—The habit of α., the most elegant, when vigorous, of all our wild Roses, most resembles that of *R. canina* α. The prickles on young strong shoots are generally crimson or rich dark purple, and the young foliage tinged with reddish brown. The *flowers* often form large bunches, and are generally of a peculiarly pleasant pink, with the stamens and the base of the petals of a glowing orange tint. The upright growth distinguishes this *Rose* from *R. arvensis:* to which however the *var.* β. approaches in habit. The species appears but little known. The *R. systyla, stylosa, brevistyla,* and *leucochroa* of the French botanists belong rather, as my friend Woods informs me, to *R. arvensis* and its *vars.*

19. R. *arvénsis*, Huds. (*trailing Dog-Rose*); prickles uncinate, those of the ramuli feeble, leaves simply serrated deciduous (glaucescent beneath), their disk eglandulose, calyx-segments sparingly pinnate deciduous, styles united hairless, shoots trailing. *Engl. Bot. t.* 188. *Woods, l. c. p.* 232. *Lindl. Ros. p.* 112. *Hook. Scot. i. p.* 158. *Engl. Fl. v. ii. p.* 397. *Hook. Fl. Lond. N. S. t.* 123. *Linn.*

β. *Woods.* Glands on the fruit.

γ. Shoots flexuose, leaves ovato-lanceolate, shining.

Woods, hedges, thickets, &c. common in the S. of England.—Rare in the mountainous districts, *Mr. Woods.* Lowlands of Scotland, *Dr. Burgess.* Near Bray, Ireland, *Mr. J. T. Mackay.*—γ. Henfield, and elsewhere in Sussex. *Fl.* June, July. ♄.—*Bush* scarcely a yard high when unsupported, with trailing shoots, often many feet in length, and much divided, entangled, feeble *ramuli*, which occasionally produce rugged excrescences and take root. *Prickles* numerous, not much dilated at the base, uncinate, those on strong shoots often compressedly conical with a straight or curved point; those on the ramuli few and scattered, small, more or less curved. *Leaflets* thin, nearly flat, coarsely serrated, dull green, paler and somewhat glaucous beneath, naked on both sides, or slightly hairy beneath, chiefly on the midrib; on some plants they are elliptical, ovate, or almost round; on others, much elongated; *petioles* hairy, or glandulose, or both, with falcate *prickles*. *Flowers* copiously produced, often in large bunches, with lanceolate *bracteas*, white, large and handsome, opening flat, with a slight fragrance at first, but soon becoming unpleasant. *Peduncle* long, sprinkled with almost sessile glands. Segments of the *calyx* reflexed by the time the petals fall, broad and short, with an acute point shorter than the petals, and a few small, entire, lanceolate *pinnæ*. Column of *styles* often overtopping the stamens, persistent; *stigmas* in a round head. *Fruit* small, spherical, ovate, or elliptical, sometimes long and slender, its length varying almost in accordance with that of the leaflets; blood-red when ripe, with an orange-red pulp of a pleasant peculiar flavour.—β. differs only by minute deciduous glands on the fruit.—γ. is a handsome *var.* approaching to *R. sempervirens;* but the leaves are deciduous and the styles hairless. The shoots and foliage are often much tinged with purple. The *leaves* shine a little even on the under side, although usually glaucescent there. Its ripe *fruit* is oval, orange-red. The *peduncles,* when several flowers grow together, spread less than in *R. sempervirens,* but rather more than in the other states of the species, in which their position is remarkably parallel.—*R. arvensis* is distinguished from all the other British species by its trailing habit. Some of the *vars.* so closely resemble the true *Ayrshire Rose,* (*R. capreolata, Neill and Don,*) that I know not where to draw the line of separation. Mr. Sabine, however, regards that plant as a deciduous *var.* of *R. sempervirens,* and points out the shining leaves, paler, but without glaucescence, on the underside, and the hairy stigmas, with some other minute differences, as distinguishing it from *R. arvensis.*—Several Roses have been met with in a wild state, which approach more nearly to *R. arvensis* than to any other British species, and which are conjectured to be hybrids between it and some garden Rose. They all resemble *R. gallica* in having dark setæ, scattered, more or less plentifully, among the prickles, in the stout stiff peduncles, and in the rigid leaves hoary underneath. In the habit of the bush they are almost intermediate between that species and *R. arvensis,* but they have not the long trailing shoots of the latter. The best known of them is the *Double Hip-Rose* of gardeners, very similar to *R. hybrida, Schleicher,* if not the same. In this, the flowers are larger than in *R. arvensis,* semidouble, of a very delicate uniform pink; the styles slightly protruded, separate, hairy. I have not seen the fruit perfect; when half-grown it is nearly spherical, very like that of *R. gallica.* This plant is said to have been found in Devonshire.—A very similar plant, with rather smaller and less multiplied petals and somewhat longer styles, grows in a hedge near Cowfold, Sussex. I have not found it perfect its fruit.—In a third, said to have been found in Yorkshire, the styles are still more lengthened, the flowers almost as in the first, and the fruit as large as that of *R. gallica,* but when ripe more like that of *R. arvensis* in colour.—The late Mr. G. Anderson found yet another in Somersetshire, with flowers of the same hue as in the others, very nearly single, approaching to those of *R. gallica* itself in size; in which the styles are but slightly hairy, and not at all protruded beyond the orifice of the receptacle. Its fruit comes to apparent perfection, is orange-red, and closely resembles that of *R. gallica*. This is known, I understand, among cultivators by the name of *R. arvensis, Andersonii.*

ORD. III. POLYGYNIA. *Many styles.*

(*Omitted by mistake at p. 223, where it should have stood at the head of the genus* Rosa.)

8. Rúbus. *Linn.* Bramble.

Cal. 5-cleft. *Pet.* 5. *Fruit* superior, of several single-seeded juicy *drupes*, placed upon a protuberant spongy *receptacle.**—*Nat. Ord.* Rosaceæ. *Linn.*—Name of uncertain origin; perhaps from the Latin *ruber*, or the Celtic, *rŭb*, red.—The *Bramble* is the badge of the *Macnabs.*—Of the descriptions of this Genus, Nos. 2 to 8, are by *Mr. Borrer;* Nos. 9 and 10 by *Mr. Jos. Woods.*

* *Leaves pinnate.*

H. 1. R. *idæus*, Linn. (*Raspberry*); leaves pinnate with 5 or 3 leaflets white and very downy beneath, footstalks channelled, stems nearly erect downy prickly, flowers drooping, petals as short as the calyx. *Engl. Bot. t.* 2443. *Hook. Scot. i. p.* 159. *Engl. Fl. v.* 2. *p.* 407.

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* *Shrub-like* plants, or *herbs* with perennial *roots*. The latter offer nothing very peculiar. In some species of the former the *stem* is upright or merely curved at the top; but in the greater number it is either prostrate, or, as is more generally the case, assurgent, arched, and decurved, and the ends of the shoot and of the side branches, if it produce any, unless prevented by circumstances from reaching the ground, take root in the latter part of the year. In the winter the shoot is partially destroyed, the part next to the original root surviving to produce flowering branches during the ensuing Summer, and usually dying after the fruit has been perfected; young shoots meanwhile springing up by its side. The rooted ends also become distinct plants at various distances from the parent root, often many yards. This mode of growth adds much to the difficulties in the discrimination of the species; since an acquaintance with both the leafy shoot and the floriferous stem, formed in the second year from its remains, is necessary. The best characters are found in the figure, the arms, and the leaves of the former. The *leaves* in all the British species of this division are, occasionally at least, quinate, and, with one exception, digitate, or somewhat pedate from a partial junction of the stalks of the two lateral pairs of leaflets; the margins serrated, for the most part unequally and irregularly; the prickles on the leaf-stalks more curved than those on the stem. In some species the *inflorescence* is remarkable; but in general the panicle varies so much as to afford no good distinction. Nor can the arms of the calyx, nor the form of its segments be depended on. The *petals* in all are delicate and crumpled, and in several species very considerable in size and width. There are some differences in the *fruit*, but they are rarely discriminative. In examining the figure of the leaves, the central leaflet is to be regarded: the lateral ones are always smaller and of a narrower proportion. In several species the leaves occasionally survive a mild winter, and are found the next season subtending flowering branches. The leaves of these branches are of less determinate figure; the number of their *leaflets* is reduced as they approach the inflorescence, and their place is supplied in the upper part of the panicle by first trifid and then simple *bracteas*, formed by the coalescence of the *stipules*. These last are usually long and narrow, entire or sometimes toothed or jagged, and issue from the petiole, for the most part, a little above its base. They afford no distinguishing characters.—No less than 48 supposed species of the genus are described and figured in the elaborate *Rubi Germanici* of Weihe and Nees von Esenbeck.

Woods, especially in the north. *Fl.* May, June. ♄.—*Stems* woody. *Leaflets* somewhat cut and serrated. *Fruit* scarlet in a wild state.

** *Leaves digitate or pedate.*

1. *Stem (mostly) biennial, woody.*

a. *nearly erect, not rooting.*

2. R. *suberéctus*, Anderson, (*upright Bramble*); stem nearly erect not rooting obsoletely angular, prickles uniform few small, leaves digitate quinate, leaflets flexible, lower pair sessile or nearly so, panicle nearly simple. *And. in Tr. of Linn. Soc. v. xi. p.* 218. *t.* 16. *Engl. Bot. t.* 2572. *Hook. Scot. i. p.* 159. *Engl. Fl. v. ii. p.* 406.

β. *Prickles* more numerous and rather larger. *R. plicatus, W. and N. t.* 1.—*R. nitidus, Engl. Fl. p.* 404.

Somewhat boggy heaths, sides of streams, &c. chiefly in mountainous districts in the north. Near Tunbridge Wells. By the large bog near Stokes Bay, Hampshire.—β. In similar situations in the Sussex forests. Near Newbury, Berkshire; *Mr. Bicheno. Fl.* June, Aug. ♄.—3 or 4 feet high, often less in exposed places, with much the habit of the *Raspberry*, merely curved at the summit; in the shade sometimes longer and more inclined, but never, I believe, rooting; tinged more or less with red according to the degree of exposure, hairless or slightly hairy, sprinkled with extremely minute and inconspicuous glands. The angles vary somewhat in distinctness; in the flowering state they are sometimes quite lost. *Leaves* occasionally pinnate, by the interjection of two smaller leaflets, (as occurs in other species also,) but usually digitate, with 5 thin and flexible *leaflets*, bright green and nearly naked above,* paler and more hairy beneath, ovate with more or less of a point, sometimes rounder. The flowering branches are mostly short and spreading; their lower leaves ternate, upper ones simple. *Inflorescence* a simple *raceme*, or a very slightly divided *panicle; pedicels* often divaricate, sometimes ascending, the upper lateral ones usually overtopping the terminal flower. When in fruit the lower pedicels are sometimes so lengthened as to form a remarkably fastigiate bunch. Pubescence of the panicle not copious, consisting of spreading loose hairs. *Calyx*-segments broad, their points usually acute and short, sometimes elongated and dilated. *Petals* long, obovate, white; in β. sometimes pink. The *fruit* of α. has been described as deep red, but I believe it is black and shining, when properly ripened, as that of β. certainly is. In both *vars.* the bright red of the partly ripe fruit is very striking.—The chief differences of β. are the more plicate *leaflets*, and the usual presence of very short stalks to the lower pair, with the larger and more abundant prickles, especially on the petioles and panicle, although they are still small and far from numerous. In α. scarcely any prickles are found about the inflorescence; in β. there are a few sometimes even on the calyx.—*R. fastigiatus, W. and N.* agrees so nearly in its flowering branches, (judging both by the figure, and by an authentic specimen,) as not to be distinguishable from *R. suberectus;* but the barren stem is described as 5—15 feet long, arched, and rooting, and its leaves are figured with considerable stalks to all the leaflets. Both *R. nitidus* also, under which those authors quote Anderson's plant, and *R. affinis*, are described as differing in the same points. They all appear likewise to have larger prickles. I have seen from Dunkeld, and have gathered in Surrey and Sussex, a *Bramble* which is probably either *R. affinis* or *R. nitidus, W. and N.* Whether these two are specifically distinct I have not been able to ascertain; nor am I sufficiently acquainted with the British plant in question to describe it. *R. plicatus, Engl. Fl.*, from Shropshire, I suspect to be the following species.

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* Judging from American specimens, *R. villosus, Pursh*, is this species with more pubescence than usual. I have specimens exactly, as far as I can discover, the same, which grew in a shady place near Tunbridge Wells.

b. *Stem arched or prostrate, rooting.*

α. *Prickles nearly uniform, confined to the angles of the stem.*

3. R. *carpínifolius*, W. and N. (*Hornbeam-leaved Bramble*); stem arched obsoletely angular not furrowed hairy, prickles uniform deflexed curved, leaves digitate of 5 stalked ovate acuminate flexible leaflets paler beneath, panicle compound hairy, branches corymbose. *W. and N. t.* 13.

Hedges, &c.—Cheshire, Lancashire, N. Wales, *Mr. W. Wilson.* Sussex. *Fl.* July, Aug. ♄.—Although this plant appears to be of common occurrence, I am far from being well acquainted with it; nor should I have ventured to give it as the *R. carpinifolius, W. and N.* but for the exact accordance of an authentic specimen. It may possibly be but a *var.* of *R. rhamnifolius.* The *stem* is more generally hairy; the *prickles* more curved and smaller, those especially on the *panicle*, more numerous; and the plant is of feebler growth. The *stem* is commonly much stained with purple, and the *prickles* purple with a yellow point. The *leaves* seem to be green beneath, more rarely so towards the inflorescence.

4. R. *rhamnifólius*, W. and N. (*Buckthorn-leaved Bramble*); stem arched obsoletely angular and furrowed nearly naked, prickles uniform straightish (horizontal or deflexed), leaves digitate of 5 stalked roundish acuminate coriaceous leaflets paler beneath, panicle repeatedly divided diffuse somewhat downy. *W. and N. t.* 6. *Engl. Fl. v. ii. p.* 401. *Engl. Bot. Suppl. t.* 2604. *Lindl. Syn. p.* 92.—*R. cordifolius, W. and N. t.* 5. *Lindl. Syn. p.* 92.

Common in hedges, thickets, and woods, at least in the S. of England. *Fl.* July, Aug. ♄.—*Stem* naked, or with scattered hairs as well as minute *glands* and occasionally a few *setæ*, many feet long, varying in thickness and in the prominence of its angles, but less remarkably channelled than in *R. fruticosus*, the old wood not of so dark a purple, and the young shoots not glaucous. *Prickles* not so strong, and the pubescence less clustered and more generally deciduous. *Leaflets* thinner, yet rigid, scarcely decurved at the edges, ovate or almost round, acuminate; even and naked or with scattered hairs above; more hairy and paler, sometimes grey or white beneath, especially towards the inflorescence. *Panicle* spreading, not contracted or elongated, its branches variously pubescent, greenish or whitish, varying in abundance of prickles. *Cal.-segments* sometimes, but not usually, prickly, short in general and not acuminate, reflexed but loosely under the fruit. *Fruit* sometimes larger than in any other British *bramble*, black, somewhat acid, the *drupes* of moderate size, not depressed nor much crowded. Authentic specimens prove this to be *R. cordifolius* as well as *R. rhamnifolius*, *W. and N.* Indeed the central *leaflet* is generally more or less cordate.

5. R. *fruticósus*, Linn. (*common Bramble or Blackberry*); stem arched angular furrowed mostly minutely hairy, prickles uniform straightish (horizontal or deflexed), leaves digitate of 5 stalked obovate coriaceous leaflets decurved at the edges, their under side and the elongated panicle white with close down. *Engl. Bot. t.* 715. *Hook. Scot. i. p.* 160. *Engl. Fl. v. ii. p.* 309.—*R. discolor*, *W. and N. t.* 20. *Lindl. Syn. p.* 93.—*R. abruptus*, *Lindl. Syn. p.* 92.

Extremely common in thickets and hedges in the more open districts. *Fl.* July, Aug. ♄.—*Stem* sometimes an inch or more in thickness and many feet long, in general deeply sulcate; while young, pale green, often glaucous, mostly hairy, with a large proportion of the hairs aggregate; when older, deep purple with a grey or bluish tinge from the appressed persistent remains of the pubescence. *Prickles* strong, not often hooked except on the *petioles* and occasionally on the *panicle*. *Leaflets* varying in width, often small, sometimes almost round with an abrupt point, but mostly obovate or somewhat cuneiform, and with the edges and point remarkably curved downwards; all of them on considerable stalks, the lateral pairs of which are often but imperfectly divided; upper side even dark green, mostly but not always naked; under side, excepting in the lower leaves of flowering branches, usually quite white. *Panicle* in general somewhat narrow, although almost always more or less divided, with divaricate branches bearing several flowers. Segments of the *calyx* reflexed, short, rarely acuminate, very woolly, seldom prickly. *Flowers* handsome, the obovate or rounder *petals* and the *stamens* often redder than is usual in other British species, except *R. leucostachys*; sometimes white. *Fruit* black, (sometimes, it is said, white,) nearly globular; *Drupes* rather small, closely packed, their summits depressed, their flavour sweet.—This species attains a greater size than our other *Brambles*, except its near affinities, *R. rhamnifolius* and *R. leucostachys*. Observations are wanting to prove the stem more than biennial, yet I doubt much whether it is constantly and strictly so. Certainly shoots apparently qualified to take root at the end occasionally occur among the dense mass of flowering branches. The Linnæan Herbarium proves it the *R. fruticosus, Linn.* An authentic specimen of *R. fruticosus, W. and N.*, in Dr. Hooker's collection, differs somewhat from the general appearance; but it exhibits merely the end of a flowering shoot, and I cannot form from it an opinion as to the dentity of their species.

6. R. *leucostáchys*, Sm. (*long-clustered Bramble*); stem arched obsoletely angular and furrowed hairy, prickles uniform straightish (horizontal or deflexed), leaves digitate of 5 stalked roundish flat coriaceous leaflets paler or white beneath, panicle elongated shaggy or downy. *Engl. Fl. v. ii. p.* 403. *Lindl. Syn. p.* 93.

β. *Stem* less shaggy, *prickles* very large.

Woods, thickets, hedges. Hampshire and Berkshire, *Mr. Bicheno.*

—β. Essex, *Mr. Forster.* Sussex. *Fl.* July, Aug. ♄.—*Stem* becoming dark purple as in *R. fruticosus*, sometimes so slightly angular as to be almost round, except near the end; with long spreading hairs when young, some of which often remain the second summer, but the stem is then more generally naked. *Prickles* varying in abundance, not so strong as in *R. fruticosus*. *Leaflets* sometimes somewhat waved but not decurved, mostly cordate, roundish with an abrupt point, sometimes ovate, unequally serrated, lower ones frequently jagged; upper surface dark green and even, sometimes hairy; under side often very shaggy with shining and frequently tawny hairs; sometimes, especially in the upper leaves, very white. *Panicle* often remarkably long, narrow, and raceme like, yet rarely simple, sometimes with many compound axillary branches at the lower part; its stalks shaggy or closely downy, with *glands* and *setæ* varying much in number and not always easily found, and generally few and slender prickles. *Cal.-segments* more or less reflexed, broad, short, rarely elongated or prickly, extremely downy, and, like the panicle, often tawny. *Petals* and *stamens* rose-coloured or white. *Fruit* black, the *drupes* less depressed and rather looser than in *R. fruticosus*.—β., which is more a forest plant, differs chiefly in its strong horizontal prickles, even exceeding in size those usual on *R. fruticosus*. It approaches that species in general appearance, and in the less shaggy, closer and more aggregate hairs of its stem. The very round leaves are white beneath, but not at all decurved at the edges. The panicle too has very large straight prickles, and the setæ are perhaps generally more conspicuous on it. I believe *R. diversifolius, Lindl.* may be referred hither.

7. R. *macrophýllus*, W. and N. (*large-leaved Bramble*); stem somewhat angular and furrowed, prickles uniform few small, leaves digitate of 3 or 5 stalked elliptical or ovate flexible leaflets, panicle repeatedly divided somewhat corymbose. *W. and N t.* 12.

Hedges, thickets, woods; rare?—Sussex. *Fl.* July, Aug. ♄.—*Stem* rather soft and spongy, about ½ an inch thick near the base, upright at first, then decurved, and growing often 15 feet or more in length, dull green, purplish when much exposed, covered with short soft hairs which are usually lost in the flowering state of the plant. *Prickles* thinly scattered on the angles of the stem, short and small, horizontal or deflexed, with a thick base. *Leaflets* often 6 inches long, soft and pliant, hairy and mostly green on both sides, occasionally greyish beneath, rather coarsely serrated; the central one generally cordate; lower leaves of the flowering branches, and many of those of the barren stem, ternate. *Panicle* hairy, with few prickles and no *setæ*, but small inconspicuous *glands* may be found both here and on some parts of the stem. *Cal.-segments* acute, at length reflexed, woolly and glandulose, with occasionally a very few prickles. *Petals* white or faint pink. *Fruit* black and shining, of a moderate size, rather loosely set.—In habit this plant approaches *R. Koehleri* γ., but wants the setæ and the unequal prickles: in technical characters it is nearer to *R. rhamnifolius* and *R. carpinifolius*, from both of which it differs much in general appearance.

β. *Prickles various, not confined to the angles of the stem.*

8. R. *Koehléri*, W. and N. (*Koehler's Bramble*); stem decurved somewhat angular and furrowed hairy glandulose setose, prickles

numerous unequal curved and straight, leaves digitate of 5 stalked ovate or elliptical leaflets, panicle much divided somewhat corymbose. *W. and N. t.* 25. *Lindl. Syn. p.* 94. *Engl. Bot. Suppl. t.* 2605.—*R. glandulosus, Engl. Fl. v. ii. p.* 403. (*excl. syn. of Bellardi, and perhaps the others.*)

β. *R. fusco-ater, W. and N. t.* 26. *Lindl.*

γ. *R. pallidus, W. and N. t.* 29. *Lindl.*—*R. affinis, Engl. Fl. v. ii. p.* 405. (*excl. syn.*)

Woods, thickets, hedges. *Fl.* July, Aug. ♄.—*Stem* green in the shade, red when exposed, decurved, or even prostrate, (scarcely arched unless supported,) very variable in size and length and in the prominence of its angles. *Prickles* copiously scattered on every part of the stem, as well as on the stalks and midribs of the leaves and on the panicle; extremely various in curvature and size; intermixed with and passing into *setæ* which likewise are very numerous. *Leaves* thin and flexible until old, varying in size and shape and in the length of the point, which is often long and taper; serratures coarse, unequal; upper surface pale opaque green, with scattered hairs, rugose, often somewhat plicate at the nerves; underside paler; old *leaves* darker above, occasionally hoary beneath. *Panicle* often very large. *Cal.-segments* hairy, very prickly, setose, and glandulose, often elongated; more or less reflexed whilst in flower, often more spreading afterwards. *Petals* white or pale pink, rather small, varying from strap-shaped to almost round, often jagged. *Fruit* black, shining, acid; *drupes* rather small and numerous, not depressed.—β. scarcely differs but in having fewer prickles and more setæ on the panicle, and in the dark purple hue of its stem, between which, however, and the usual paler red of α., every gradation occurs.—γ. is frequently a large plant, of a pale green, (from the shady situations in which it grows,) with leaves 6 inches long, and a stem with fewer and less unequal prickles and extremely numerous short setæ.—*R. echinatus, Lindl. Syn. p.* 94, differs somewhat in aspect, and I cannot confidently unite it to this species, although I do not find satisfactory characters to distinguish it. Its chief peculiarity is in the prickles, which, although numerous and irregular, differ less in shape and size, and approach somewhat to those of *R. rhamnifolius* or *R. carpinifolius.* The setæ are irregularly distributed, occurring in groups among the rigid hairs which copiously clothe the stem. The leaves are rather rigid. It grows in the Sussex forests, and Mr. Forster finds it in Essex.

9. R. *córylifolius*, Sm. (*Hazel-leaved Bramble*); stem decurved roundish, prickles straight scattered somewhat unequal but not passing insensibly into setæ, leaves digitate of 5 ovate leaflets, the outermost sessile and lapping over the others, calyx of the fruit spreading or reflexed. *Engl. Bot. t.* 827. *Hook. Scot. i. p.* 160. *Engl. Fl. v. ii. p.* 408.

Hedges and thickets. *Fl.* July, Aug. ♄.—*Stem* considerably stouter and longer than in *R. cæsius,* frequently somewhat angular, generally hairy. *Prickles* usually straight and deflexed. *Setæ* few or none, except about the inflorescence, and there distinct from the prickles. *Leaflets* broadly ovate, with a cordate base, soft, hairy, paler or sometimes hoary at the back; intermediate pair on short stalks, on which the external pair is usually quite sessile. *Panicle* very various, sometimes broad and corymbose like that of *R. cæsius*, at others longer and contracted. *Fruit* large, acid; *drupes* more numerous than in *R. cæsius*, but less so than in most other species.—The nearest affinity of this *bramble* is with *R. cæsius*, but in artificial character it seems rather to belong to the division with uniform prickles, according to the distribution of Weihe and Nees, than to those which have aciculi and setæ; and accordingly Lindley in his *Synopsis* has referred it to the *R. vulgaris* of those authors, to which indeed it has considerable resemblance; but the sessile external leaflets seem sufficient to distinguish it from that and all other species enumerated by them in the same division of the genus. What is perhaps a *var.* of *R. corylifolius*, but furnished with a much greater abundance of setæ, particularly about the panicle, occurs in many parts of England, and renders it impossible to form so distinct a character for this species as might otherwise be done. This *var.* frequently approximates to *R. cæsius*, notwithstanding its being in general so much larger and stronger.

10. R. *cǽsius*, Linn. (*Dewberry*); stem prostrate round or nearly so glaucous, prickles straight unequal passing insensibly into setæ, the length of the largest rarely equalling the diameter of the stem, leaves digitate of 3 or more rarely 5 ovate leaflets the outermost sessile, calyx embracing the fruit. *Engl. Bot. t.* 826. *Hook. Scot. i. p.* 160. *Engl. Fl. v. ii. p.* 409. *W. & N. t.* 46. *A. B. & C.*

β. *Stem* stronger obsoletely angular, *leaflets* generally 5. *R. dumetorum*, *W. & N. t.* 45. *A.*

Thickets, hedge-banks, and borders of fields. *Fl.* June, July. ♄.—*Stem* weak, with many slender branches rooting at the extremities. *Prickles* usually straight, scarcely deflexed, the largest generally small and slender, but now and then larger and stronger ones may be observed; always varying in size, and diminishing gradually so as not to admit of a distinct line of separation between them and the *setæ* with which the plant is also furnished: both vary in quantity, being sometimes so crowded as almost to cover the stem, sometimes few and widely scattered. *Leaflets* broadly ovate, often lobed, pubescent above, more so and softer beneath and of a paler colour, sometimes covered with long shining hairs; the outermost sessile, or with only hardly distinguishable stalks. *Panicle* corymbose; the divisions frequently cymose. *Flowers* few in α., more numerous in β. *Drupes* of the *fruit* few, large, juicy, black with a fine glaucous bloom and agreeably acid flavour.—In the specific character of *R. dumetorum* the smaller prickles and setæ are said to be few in number, but in the more detailed account, Weihe and Nees acknowledge that they are sometimes densely crowded, and this agrees better with the figures given by these authors. In this country perhaps the largest and stoutest *var.* is, in general, the most abundantly furnished with arms. *R. cæsius* may occasionally be found with a pinnate leaf; and small specimens occur in chalky thickets which, from the tenderness of the plant and fewness of the prickles, might almost be mistaken for *R. saxatilis.*

2. *Stem herbaceous or nearly so.*

H. 11. R. *saxátilis*, Linn. (*Stone Bramble*); leaflets 3 slightly downy, runners creeping herbaceous, panicle of few flowers. *Engl. Bot. t.* 2233. *Hook. Scot. i. p.* 161. *Engl. Fl. v. ii. p.* 410.

Stony mountainous places, especially in the north. *Fl.* June. ♃.—Erect, slender, 8—10 inches high, with a few weak straight *prickles* on the *stem. Leaves* 2—3; *leaflets* ovate. *Petals* minute, narrow, greenish yellow. *Fruit* of a very few red, (comparatively) large, clustered *drupes*.

12. R. *árcticus*, Linn. (*Arctic Bramble*); leaflets 3 glabrous obtusely serrated, runners none, stem without prickles bearing (mostly) 1 flower, petals roundish notched. *Engl. Bot. t.* 1585. *Hook. Scot. i. p.* 161. *Engl. Fl. v. ii. p.* 411.

Scotland: Rocky mountainous parts in the isle of Mull, according to the late *Dr. Walker*, and on Ben-y-glo, *Richard Cotton, Esq.:* but we have searched these spots in vain for the plant. *Fl.* June. ♃.—*Stems* 4—6 inches high, slender, having 3—4 *leaves*. *Flowers* of a deep rose-colour, large. *Fruit* purplish red, highly prized by the Swedes.

*** *Leaves simple.*

13. R. *Chamæmórus*, Linn. (*Cloud-berry*); diœcious, leaves simple lobed, stem without prickles herbaceous single-flowered. *Engl. Bot. t.* 716. *Hook. Scot. i. p.* 161. *Engl. Fl. v. ii. p.* 112.

Alpine moors, Wales, north of England, Scotland, and Ireland. *Fl.* June. ♃.—Erect, 8—10 inches high. *Flowers* large, white. *Fruit* large, of an agreeable flavour, and much used as food by the Norwegians and Laplanders. Badge of the Clan *Macfarlane.*

9. FRAGÁRIA. *Linn.* Strawberry.

Cal. 10-cleft, segments alternately smaller. *Pet.* 5. *Fruit* consisting of many minute *nuts*, placed upon a large fleshy deciduous receptacle.—*Nat. Ord.* ROSACEÆ. *Juss.*—Name from *fragrans, odorous*, on account of its fragrant smell.

H. 1. F. *vésca*, Linn. (*Wood Strawberry*); calyx of the fruit reflexed, hairs of the peduncles widely spreading, those of the pedicels close-pressed silky. *Engl. Bot. t.* 1524. *Hook. Scot. i. p.* 162. *Engl. Fl. v. ii. p.* 414. β. atrovirens. F. calycina.

Woods and thickets, frequent.—*Fl.* May—July. ♃.

2. F. *elátior*, Erhr. (*Hautboy Strawberry*); calyx of the fruit reflexed, hairs of the peduncles and pedicels widely spreading somewhat deflexed. *Sm.*—*Engl. Bot. t.* 2197. *Hook. Scot. i. p.* 162. *Engl. Fl. v. ii. p.* 415.—*F. moschata, Duchesne.*—*Lindl.*

Groves and hedges, in several places; but scarcely indigenous. *Fl.* June—Sept. ♃.

~~3. F. *calycína*, Loisel. (*calycine Strawberry*); "leaflets sessile hairy roundish wedge-shaped coarsely toothed, peduncles longer than the scapes, calyx as large as the corolla." *Lindl. Syn. p.* 96.~~

~~In Northumberland. *Lindl.*—*Fl.* June—Sept. ♃.~~

10. CÓMARUM. *Linn.* Marsh Cinque-foil.

Cal. 10 (or more) cleft, segments alternately smaller. *Pet.* 5 (or more), shorter than the calyx. *Pericarps* inserted on a large, spongy, hairy, permanent *receptacle.*—*Nat. Ord.* Rosaceæ. *Juss.*—Name, from κομαρος, a name of Theophrastus, applied to some plants of the Arbutus tribe.

H. 1. C. *palústre*, Linn. (*purple Marsh Cinque-foil*). *Engl. Bot. t.* 172. *Hook. Scot. i. p.* 165. *Engl. Fl. v. ii. p.* 433.

Marshes and peat-bogs, frequent. *Fl.* July. ♃.—*Stems* ascending. *Leaves* petioled, with 7 lanceolate, deeply serrated *leaflets*, upper ones quinate or ternate, sessile, with a pair of ovate *stipules*. *Flower-stalk* branched. *Flowers* of a deep dingy purple.—Very nearly allied to *Potentilla.*

11. Potentílla. *Linn.* Cinque-foil.

Cal. 10-cleft, segments alternately smaller. *Pet.* 5. *Fruit* consisting of numerous minute *nuts*, placed upon a small dry *receptacle.*—*Nat. Ord.* Rosaceæ. *Juss.*—Name from *potens*, *powerful*, from the medicinal properties attributed to some of the species.

* *Leaves pinnate.*

1. P. *fruticósa*, Linn. (*shrubby Cinque-foil*); leaves pinnate, leaflets (generally 5) oblongo-lanceolate entire, stem shrubby. *Engl. Bot. t.* 88. *Engl. Fl. v. ii. p.* 416.

Rare; rocky and bushy places, in Middleton Teesdale, Yorkshire. At Rock-forest, county of Clare, Ireland; *Mr. J. T. Mackay.* *Fl.* June. ♄.

H. 2. P. *anserína*, Linn. (*Silver-weed*); leaves interruptedly pinnate serrated silky especially beneath, peduncles axillary single-flowered, stem creeping. *Engl. Bot. t.* 861. *Hook. Scot. i. p.* 162. *Engl. Fl. v. ii. p.* 417.

Moist meadows and road-sides, frequent. *Fl.* June, July. ♃.—Varying much in the degree of silkiness; sometimes silky and white on both sides. *Flowers* large, yellow. *Leaflets* lanceolate.

3. P. *rupéstris*, Linn. (*Strawberry-flowered Cinque-foil*); stem erect dichotomous, leaves pinnate cuneato-ovate serrated hairy, root-leaves about 5, cauline ones 3. *Engl. Bot. t.* 2058. *Engl. Fl. v. ii. p.* 417.

Very rare, on Craig Wreidhin, Montgomeryshire, *Ray*; where it was supposed to have been lost; but was found again by *J. E. Bowman, Esq.* to whom I am indebted for a specimen, in 1817.—*Flowers* large, white.

** *Leaves digitate.*

H. 4. P. *argéntea*, Linn. (*hoary Cinque-foil*); leaves quinate, leaflets cuneiform cut white and downy beneath, their margins revolute, stem decumbent. *Engl. Bot. t.* 89. *Hook. Scot. i. p.* 162. *Engl. Fl. v. ii. p.* 418.

Pastures and road-sides, especially in a gravelly soil. *Fl.* June. ♃.—*Flowers* terminal, small, yellow, sub-corymbose.

H. 5. P. *vérna*, Linn. (*Spring Cinque-foil*); root-leaves quinate, leaflets obovate (green on both sides) sharply serrated upwards, hairy beneath and at the edge, petals obcordate longer than the calyx, stem decumbent. *Engl. Bot. t.* 37. *Hook. Scot. i. p.* 162. *Engl. Fl. v. ii. p.* 420.

Dry pastures, Suffolk, Cambridgeshire, near Bristol, and in the north of England; Wales, *Mr. W. Wilson,* and Scotland, especially about Edinburgh, Breadalbane mountains, *Lightfoot* and *Mr. Trevelyan. Fl.* May, June. ♃.—A small woody procumbent plant, 3—5 inches in length, more or less hairy. *Flowers* at the end of weak leafy branches.

6. P. *alpéstris,* Hall. fil. (*orange alpine Cinque-foil*)*;* "radical leaves of five wedge-shaped somewhat hairy leaflets deeply cut in the upper half, upper stipules ovate, petals heart-shaped, stem ascending." *Engl. Fl. v. ii. p.* 418.—*P. aurea, Engl. Bot. t.* 561. *Hook. Scot. i. p.* 163. (*not Linn.*)—*P. salisburgensis, Jacq. Ic. Rar. t.* 490.—*P. verna, var. Wahl. Nestl.*

Mountains of the north of England, *Smith;* Wales, *Mr. W. Wilson;* and Breadalbane and Clova mountains of Scotland. *Fl.* June, July. ♃.—With this I am very familiar, and have gathered it for a succession of years on the Scottish mountains, and have endeavoured to find any solid character by which it might be distinguished from *P. verna,* but in vain. The extreme *vars.*, it is true, do appear distinct, but they insensibly pass into each other; an opinion in which I am happy to be supported by such authority as Mr. W. Wilson, who finds at Llandudno, a little above high-water mark, specimens of *verna,* which cannot be distinguished from *alpestris.* If retained as a species, surely the name *salisburgensis* should be preferred to the much more recent one of the young Haller.

7. P. *opáca,* Linn. (*Saw-leaved hairy Cinque-foil*)*;* radical leaves of seven hairy linear wedge-shaped leaflets deeply serrated throughout, stem-leaves ternate mostly opposite, stems recumbent. *Engl. Bot. t.* 2449. *Hook. Scot. i. p.* 163. *Engl. Fl. v. ii. p.* 421. —*P. intermedia, Nestl. Pot. t.* 8.

Hills of Clova and braes of Balquhidder, Scotland, *G. Don. Fl.* June. ♃.—I am indebted for the only specimen I have ever seen of this to the kindness of Mr. D. Don. The *leaflets* are coarsely serrated to the base, and in this respect, as well as in stouter habit, it differs from the two preceding species. Mr. Borrer has pointed out to me the synonym of Dr. Nestler.

8. P. *álba,* Linn. (*white Cinque-foil*)*;* stems filiform procumbent, root-leaves quinate, upper ones ternate, leaflets oblong with converging serratures silky beneath. *Engl. Bot. t.* 1384. *Engl. Fl. v. ii. p.* 422.

Wales (?) *Mr. Heaviland;* (*in Hudson*). *Fl.* June, July. ♃.—*Flowers* white.

11. 9. P. *réptans,* Linn. (*common creeping Cinque-foil*)*;* stem filiform creeping, leaves quinate, leaflets obovato-cuneiform serrated, peduncles axillary single-flowered longer than the leaf. *Engl. Bot. t.* 862. *Hook. Scot. i. p.* 163. *Engl. Fl. v. ii. p.* 423.

Meadows and pastures, and by way-sides. *Fl.* June—Aug. ♃.—*Stems* taking root at the joints. *Flowers* yellow.

*** *Leaves ternate.*

10. P. *tridentáta*, Soland. (*three-toothed Cinque-foil*); leaves ternate, leaflets oblongo-cuneiform three-toothed at the extremity, glabrous above hairy beneath, petals oval longer than the calyx, stem ascending. *Engl. Bot. t.* 2389. *Hook. Scot. i. p.* 164. *Engl. Fl. v. ii. p.* 424.

Scotland, very rare. On Werron hill and the east rocks of Clova. *Fl.* May, June. ♃.—*Flowers* white.

H. 11. P. *Fragariástrum*, Ehrh. (*Strawberry-leaved Cinque-foil*); leaves ternate, leaflets obovate deeply serrated silky on both sides (especially beneath), petals obcordate as long as the calyx, stems procumbent. *Engl. Fl. v. ii. p.* 425.—*P. Fragaria, Poir.*—*Hook. Scot. i. p.* 164.—*Fragaria sterilis, Linn.*—*Engl. Bot. t.* 1785.

Woods, banks, and dry pastures, frequent. *Fl.* March, April. ♃.—*Flowers* white.

12. Tormentílla. *Linn.* Tormentil.

Cal. 8-cleft, segments alternately smaller. *Pet.* 4. *Fruit* consisting of numerous minute *nuts*, placed upon a small dry *receptacle.*—*Nat. Ord.* Rosaceæ. *Juss.*—Named from *tormina*, the *dysentery*, in the cure of which it was employed on account of its astringent qualities.

H 1. T. *officinális*, Sm. (*common Tormentil*); leaves ternate all sessile, leaflets lanceolate inciso-serrate, stem ascending dichotomous. *Engl. Bot. t.* 863. *Hook. Scot. i. p.* 164. *Engl. Fl. v. ii. p.* 427.—*Potentilla Tormentilla, Sibth. Nestl.*

Moors and heathy places, frequent. *Fl.* June, July. ♃.—*Root* large and woody, used medicinally, and by the Laplanders for staining leather of a red colour. *Peduncles* axillary and terminal.

E, 2. T. *réptans*, Linn. (*trailing Tormentil*); leaves ternate and quinate on foot-stalks obovato-cuneiform inciso-dentate, stem prostrate. *Engl. Bot.* 864. *Hook. Scot. i. p.* 164. *Engl. Fl. v. ii. p.* 428.—*Potentilla nemoralis, Nestl.*—*Lehm. Pot. t.* 13. (*excellent.*)

Hedge-banks, borders of fields and waste places. *Fl.* June, July. ♃.—This, as well as the last, varies with 5 *petals*, when it becomes difficult to be distinguished from *Potentilla reptans*, and many Botanists are of opinion that the two plants are the same, of which the two extremes are represented in *English Botany.* Rarely is *Potentilla reptans* found so much creeping as in *Engl. Bot. t.* 882; nor *Torm. reptans* so upright, or so decidedly panicled as in *Engl. Bot. t.* 864.—I am often at a loss to distinguish between the two.

13. GÉUM. *Linn.* Avens.

Cal. 10-cleft, alternate segments minute. *Pet.* 5. *Pericarps* with long geniculated *awns*. *Receptacle* elongated.—*Nat. Ord.* ROSACEÆ. *Juss.*—Name, from γευω, *to yield an agreeable flavour.* The roots of *G. urbanum* are aromatic.

H. 1. G. *urbánum*, Linn. (*common Avens, Herb Bennet*): flowers erect, cauline leaves ternate, radical ones lyrato-pinnate. *Engl. Bot. t.* 1400. *Hook. Scot. i. p.* 165. *Engl. Fl. v. ii. p.* 429.

Woods and hedges, frequent. *Fl.* June. ♃.—1—2 feet high. *Root-leaves* on long foot-stalks. *Flowers* small, yellow. *Petals* patent.

H. 2. G. *riväle*, Linn. (*Water Avens*); flowers drooping, awns feathery, cauline leaves ternate, radical ones interruptedly pinnate and lyrate. *Engl. Bot. t.* 106. *Hook. Scot. i. p.* 165. *Engl. Fl. v. ii. p.* 430.

Marshes and wet moory grounds, frequent. Sometimes very alpine. *Fl.* June, July. ♃.—A shorter, but stouter plant than the last. *Flowers* much larger, with erect purplish *calyces* and erect dull purplish-orange coloured *petals*, broadly obcordate, clawed. *Head* of *fruit* pedicellate. A *var.* is not uncommon which seems to be a hybrid. Mr. James Wilson finds it with semi-double flowers in Ayrshire.

14. DRÝAS. *Linn.* Dryas.

Cal. 8—10 cleft, its segments equal. *Pet.* 5—8. *Pericarps* with long feathery *awns.*—*Nat. Ord.* ROSACEÆ. *Juss.*—Name δρυς, the *oak*, from a distant similarity between their leaves.

H. 1. D. *octopétala*, Linn. (*white Dryas or Mountain Avens*); petals 8, leaves simple serrated. *Engl. Bot. t.* 451. *Hook. Scot. i. p.* 165. *Engl. Fl. v. ii. p.* 432.

Frequent in many of the alpine parts of England, Scotland, and Ireland, especially in a limestone soil. North coast of Sutherland, abundant. *Fl.* June. ♃.—*Stem* short, procumbent. *Leaves* ovato-elliptical, white and downy beneath, petioled. *Flowers* large, white.

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CLASS XIII. POLYANDRIA.

Many styles, inserted upon the receptacle.

ORD. I. MONOGYNIA. 1 *style.*

* *Petals* 4.

1. Papáver. *Linn.* Poppy.

Cal. of 2 caducous leaves. *Pet.* 4. *Stigma* sessile, radiated. *Caps.* superior; the *seeds* on *receptacles*, forming incomplete dissepiments, escaping by pores beneath the permanent *stigma.*—*Nat. Ord.* Papaveraceæ. *Juss.*—Name given because it was used with *pap*, *papa* in Celtic, to induce sleep.

H· 1. P. *Argemóne*, Linn. (*long-prickly-headed Poppy*); capsule clavate hispid ribbed, stem leafy many-flowered, leaves bipinnatifid. *Engl. Bot. t.* 643. *Hook. Scot. i. p.* 168. *Engl. Fl. v. iii. p.* 10.

Corn-fields, not unfrequent. *Fl.* June. ⊙—*Flowers* small. *Petals* narrow, scarlet.

H· 2. P. *hýbridum*, Linn. (*round-rough-headed Poppy*); capsule subglobose hispid furrowed, stem leafy many-flowered, leaves doubly pinnatifid. *Engl. Bot. t.* 43. *Engl. Fl. v. iii. p.* 9.

Sandy and chalky fields in England, rather rare. Norfolk, Durham, Kent. Essex, *Mr. Jonathan Grubb*; Ireland, *Mr. J. T. Mackay. Fl.* July. ⊙.

3. P. *núdicaule*, Linn. (*naked-stalked yellow Poppy*); capsule hispid obovate 4—6 ribbed, scapes single-flowered, leaves pinnatifid, lobes toothed or cut acute. *Hook. in Fl. Lond. N. S. t.* 213.

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Rocky places at Achil-head on the west coast of Ireland, *Professor Giesecké. Fl.* July. ♃.—*Flowers* yellow, resembling those of *Meconopsis cambrica.*

H. 4. P. *dúbium*, Linn. (*long-smooth-headed Poppy*); capsules glabrous oblong, stem many-flowered hairy, bristles of the flower-stalks appressed, leaves pinnatifid. *Engl. Bot. t.* 644. *Hook. Scot. i. p.* 168. *Engl. Fl. v. iii. p.* 10.

Corn-fields, not unfrequent. *Fl.* July. ⊙.—*Stems* 1—2 feet high, hispid with spreading hairs. *Flowers* large. *Petals* broad, palish scarlet.

H. 5. P. *Rhœas*, Linn. (*common red Poppy*); capsules glabrous nearly globose, stem many-flowered bristly, its bristles and those of the flowerstalks spreading, leaves pinnatifid. *Engl. Bot. t.* 645. *Hook. Scot. i. p.* 168. *Engl. Fl. v. iii. p.* 11.

Abundant in corn-fields; but rare on the coast of Scotland. *Fl.* June, July. ⊙—Distinguished from the last by its short *capsule* and the spreading hairs of the *flowerstalks*. *Pet.* broad, deep scarlet.

6. P. *somníferum*, Linn. (*white Poppy*); capsule globose glabrous, as well as the stem and glaucous amplexicaul leaves. *Engl. Bot. t.* 2145. *Hook. Scot. i. p.* 168. *Engl. Fl. v. iii. p.* 11.

In Norfolk, Cambridgeshire, and other places where the plant has been cultivated; but as the *Rev. Prof. Henslow* observes to me, never truly wild. *Fl.* July. ⊙—*Flowers* generally white, with a purple eye; but varying much as to colour. From the unripe capsules, *opium*, from the Greek *οπος, juice*, is prepared.

2. Meconópsis. *Viguier.* Welsh-Poppy.

Cal. of 2, caducous leaves. *Pet.* 4. *Style* evident. *Stigma* of few rays. *Capsule* opening at the top by 4—6 valves. *Receptacles* of the *seeds* filiform.—*Nat. Ord.* Papaveraceæ. *Juss.*—Name from *μηκων* a *Poppy*, and *οψις* a *resemblance.*

H. 1 M. *cámbrica*, Vig. (*common Welsh-Poppy*); capsules glabrous, leaves mostly petiolate. *De Cand.*—*Papaver cambricum, Linn.*—*Engl. Bot. t.* 66. *Engl. Fl. v. iii. p.* 66.

Rare: rocky and shady places in North Wales and Westmoreland. About Edinburgh, Scotland. Rostrevor hill, Ireland, *Mr. J. T. Mackay. Fl.* June. ♃.—*Plant* glabrous. *Leaves* on long stalks, pinnate, the pinnæ pinnatifid. *Flowers* large, yellow.—A genus, as De Candolle observes, between *Papaver* and *Argemone.*

3. Glaucium. *Tourn.* Horned-Poppy.

Cal. of 2 leaves, caducous. *Pet.* 4. *Stigma* 2-lobed. *Pod* superior, linear, 2 (3 or 4) celled, with as many valves. *Seeds* numerous, dotted. (*Glaucium* and *Roemeria, De Cand.*)—*Nat. Ord.* Papaveraceæ. *Juss.*—Named from the *glaucous* or sea-green hue of the stems and leaves.

1. G. *lúteum*, Linn. (*yellow Horned-poppy*); pod minutely tuberculated, cauline leaves amplexicaul sinuate, stem glabrous. *Engl. Bot. t.* 8. *Hook. Scot. i. p.* 167. *Engl. Fl. v. iii. p.* 6.—*Chelidonium Glaucium, Linn.*

Sandy sea-shores, frequent. *Fl.* July, Aug. ⊙.—1—2 feet high, very glaucous, much branched. *Leaves* scabrous. *Flowers* very large, handsome, succeeded by *pods* 6—10 inches long. *Dissepiment* spongy, as in the following species.

2. G. *phœníceum*, Gært. (*scarlet Horned-poppy*); pod hispid, cauline leaves deeply pinnatifid and cut, stem hairy. *Engl. Bot. t.* 1433. *Engl. Fl. v. iii. p.* 7.—*Chelidonium corniculatum, Linn.*

Said to have been found in Portland island, and in Norfolk. *Fl.* June, July. ⊙.—*Petals* scarlet, with a black spot at their base.

H 3. G. *violáceum*, Juss. (*violet Horned-poppy*); pod 3-valved with membranous dissepiments, leaves tripinnatifid, the segments linear scabrous, stem glabrous. *Engl. Fl. v. iii. p.* 7.—*Chelidonium hybridum, Linn.*—*Engl. Bot. t.* 201.—*Roemeria hybrida, De Cand.*

Corn-fields, rare. In Norfolk and Cambridgeshire; only in cultivated ground, and probably introduced. *Rev. Prof. Henslow. Fl.* May, June. ⊙.

4. Chelidónium. *Linn.* Celandine.

Cal. of 2 leaves, caducous. *Pet.* 4. *Stigma* 2-lobed. *Pod* superior, linear, 1-celled, 2-valved. *Seeds* numerous, crested.—*Nat. Ord.* Papaveraceæ. *Juss.*—Named from χελιδων, a *swallow;* probably from the plant flowering at the time of the arrival of those birds.

H. 1. C. *május*, Linn. (*common Celandine*). *Engl. Bot. t.* 1581. *Hook. Scot. i. p.* 167. *Engl. Fl. v. iii. p.* 4.

β. *Leaflets* and *petals* jagged. *C. laciniatum, De Cand. Lindl.*

Waste places, especially near towns and villages. *Fl.* May, June. ♃.—About 2 feet high, slightly hairy, brittle, full of a yellow fetid juice. *Leaves* pinnated, with about 5 decurrent *leaflets*, which are broadly ovate, lobed and crenated. *Flowers* in long-stalked *umbels*, yellow, rather small. *Pod* long, somewhat turgid.

5. Actǽa. *Linn.* Bane-berry.

Cal. of 4 leaves, caducous. *Pet.* 4. *Berry* 1-celled. *Seeds* numerous.—*Nat. Ord. Spurious* Ranunculaceæ. *Juss.*—Name ακτη, the *Elder:* the leaves somewhat resembling those of *Elder.*

1. A. *spicáta*, Linn. (*Herb Christopher*); raceme simple elongated, petals as long as the stamens, pedicels of the fruit slender. *Engl. Bot. t.* 918. *Hook. Scot. i. p.* 167. *Engl. Fl. v. iii. p.* 3.

Bushy places, especially in limestone tracts in Yorkshire; near Halifax, *Mr. Leyland.* Cleish woods, Scotland, *Mr. Arnott. Fl.* May. ♃.—1—2 feet high. *Leaves* petiolate, 3-ternate; *leaflets* ovate, deeply cut and serrated.

** *Petals* 5.

6. Heliánthemum. *Tourn.* Rock-rose.

Cal. of 3 equal leaves, or 5, of which 2 outer ones are smaller. *Pet.* 5. *Stigma* capitate. *Caps.* 3-valved.—*Nat. Ord.* Cistineæ. *Juss.*—Name from ἥλιος, *the sun*, and ανθος, *a flower.* The same as *Helianthus.*—I am happy to be able to avail myself of the specific characters of most of the British species of this difficult genus, given by Mr. Bentham in Lindley's Synopsis.

1. H. *cánum*, Dun. (*hoary dwarf Rock-rose*); shrubby without stipules, leaves opposite ovate or oblong petiolate flat hoary beneath, racemes terminal bracteated, cal.-leaves 5, the inner with 4 ribs, style twisted at the base reflexed, at the apex inflexed, seeds blackish. *Benth.—Lindl. Syn. p.* 36.—*Cistus canus, Jacq.—C.*

anglicus, Linn.—C. marifolius, Engl. Bot. t. 396. (*not Linn.?*) *Hook. in Fl. Lond. N. S. t.* 171. *Engl. Fl. v. iii. p.* 23.

Rare: alpine rocks in the north of England, Lancashire, Westmoreland, on Cronkley Fell, Yorkshire, and in Wales. *Fl.* May, June. ♃.—A small shrubby plant, with hoary *leaves*, and rather small yellow *flowers*.

2. H. *guttátum*, Miller, (*spotted annual Rock-rose*); annual, erect without stipules, leaves oblongo-lanceolate or linear, the lower opposite, the upper alternate, racemes without bracteas, cal.-leaves 5, style straight very short, stigma capitate. *Benth.—Lindl. Syn. p.* 37.—*Cistus guttatus, Linn.—Engl. Bot. t.* 544. *Engl. Fl. v. iii. p.* 24.

Very rare. In Jersey; Anglesea, *Rev. H. Davies*; Holyhead mountain, *Mr. W. Wilson*. *Fl.* June, July. ⊙.

3. H. *ledifólium*, Willd. (*ledum-leaved Rock-rose*); herbaceous, slightly downy, with stipules, leaves lanceolate, flower-stalks solitary erect opposite to the leaves shorter than the calyx, styles straight, capsule polished. *Lindl. Syn. p.* 37.—*Cistus ledifolius,* (*and niloticus*) *Linn.—Engl. Bot. t.* 2414.

Very rare. On Brent downs, Somersetshire, *Huds. Fl.* June, July. ♃.—I have never seen British specimens of this plant. It is certainly the *Cistus niloticus* of Linn.; his *C. ledifolius* being glabrous, and probably the cultivated state of the plant.

4. H. *vulgáre*, Gært. (*common Rock-rose*); shrubby procumbent stipuled, leaves opposite ovate or oblong nearly flat green above, racemes terminal bracteated, cal.-leaves 5 the inner furrowed and scariose at the edge, style bent at the base, somewhat clavate at the apex, seeds black. *Benth.—Lindl. Syn. p.* 37.—*Cistus Helianthemum, Linn.—Engl. Bot. t.* 1321. *Hook. Scot. i. p.* 170. *Engl. Fl. v. iii. p.* 26.—*C. tomentosus, Engl. Bot. t.* 2208. *Engl. Fl. v. iii. p.* 27.

β. *petals* lanceolate, often cut. *Cistus surrejanus, Linn.—Engl. Bot. t.* 2207.

Frequent in dry pastures, especially in a gravelly or chalky soil. β. About Croydon, Surrey. *Fl.* July, Aug. ♃.—I am indebted to my friend, *Mr. William Christy*, for specimens of *C. surrejanus* of Authors, and I quite agree with that gentleman in considering it a *variety*, or rather a monstrosity of *H. vulgare*, with imperfect *petals*; their great irregularity too confirms this opinion. Mr. Borrer sometimes meets with it on the Sussex downs.

+ 5. H. *polifólium*, (*white Mountain Rock-rose*); shrubby procumbent stipuled hoary, leaves opposite ovato-oblong or oblongo-linear more or less revolute at the edge, racemes terminal bracteated, cal.-leaves 5, the inner furrowed and scariose at the edge, style bent at the base, somewhat clavate at the apex, seeds black, *Benth.—Helianthemum apenninum, De Cand.—Lindl. Syn. p.* 37.—*Cistus polifolius, Linn.—Engl. Bot. t.* 1322. *Engl. Fl. v. iii. p.* 27.

Rare, in the south of England. Brent downs, Somersetshire, and Babbicombe-rocks, by the sea; *Rev. A. Neck.*—*Flowers* white. The *H. polifolium* of De Cand. is not the plant of Linnæus, but the *splendens* of Lamarck.

7. Tília. *Linn.* Lime.

Cal. 5-partite, deciduous. *Pet.* 5, with or without a *nectary* at the base. *Fruit* coriaceous, 5-celled, without valves, cells 1—5, 2-seeded.—*Nat. Ord.* Tiliaceæ. *Juss.*—Name of obscure origin.

1. T. *europǽa*, Linn. (*common Lime or Linden-tree*); nectaries none, leaves twice the length of the footstalks quite glabrous except a woolly tuft at the origin of each vein beneath, cymes many-flowered, fruit coriaceous downy. *Sm.—Engl. Bot. t.* 610. *Hook. Scot. i. p.* 170. *Engl. Fl. v. ii. p.* 17.—*T. intermedia, De Cand. Lindl.*

Woods and hedge-rows, probably not indigenous. *Fl.* July. ♄.—A large and handsome *tree;* its *flowers*, "at dewy eve distilling odours," yellowish-green, on a stalked *cyme*, springing from a large lanceolate foliaceous *bractea*, which falls off with the fructified cymes. *Fruit* generally 1-celled and 1-seeded.—Linnæus is said to have derived his own name from the Swedish *Lin*, our Linden or Lime tree.

2. T. *grandifólia*, Ehrh. (*broad-leaved downy Lime-tree*); nectaries none, leaves downy especially beneath, origin of the veins woolly, branches hairy, umbels 3-flowered, fruit woody downy turbinate with prominent angles. *Sm.—Engl. Fl. v. iii. p.* 18.

Woods and hedges, in several places; but scarcely wild. Blair in Athol, Scotland; *Mrs. Beecroft.* Near Edinburgh; *Dr. Greville. Fl.* June, July. ♄.

3. T. *parvifólia*, Ehrh. (*small-leaved Lime*); nectaries none, leaves smooth above, glaucous beneath with scattered as well as axillary hairy blotches, umbels compound many-flowered, fruit roundish brittle nearly glabrous. *Sm.—Engl. Bot. t.* 1705. *Engl. Fl. v. iii. p.* 20.—*T. microphylla, Vent.*

Woods in Essex, Lincolnshire, &c. "Perhaps the only truly native *Lime-tree* in Britain." *Mr. E. Forster. Fl.* Aug. ♄.

*** *Petals numerous.*

8. Nymphǽa. *Linn.* White Water-Lily.

Cal. of 4—5 leaves. *Pet.* numerous, inserted upon a fleshy *disk* or covering to the germen, (so as apparently to arise from it,) as well as the *stamens*. *Berry* many-celled, many-seeded, deliquescent.—*Nat. Ord.* Nymphæaceæ. *De Cand.*—Name; the Νυμφαια of the Greeks, so called from its inhabiting the waters, as the *Nymphs* or Naiads were wont to do.

1. N. *álba*, Linn. (*great White Water-Lily*); leaves cordate

entire, stigma of 16 ascending rays. *Engl. Bot. t.* 160. *Hook. Scot. i. p.* 169. *Hook. in Fl. Lond. N. S. t.* 140. *Engl. Fl. v. iii. p.* 14.

Lakes and still waters, frequent. In the quiet recesses of the Highland lakes, especially,

> " The water lily to the light
> Her chalice rears of silver bright."

Fl. July. ♃.—In the northern parts of Scotland and the Hebrides, I have seen the flowers as small as those of the *N. odorata* of North America.

9. NÚPHAR. *Sm.* Yellow Water-Lily.

Cal. of 5—6 leaves. *Pet.* numerous, inserted, as well as the *stamens,* upon the *receptacle ; berry* superior, many-celled, many-seeded.—*Nat. Ord.* NYMPHÆACEÆ. *De Cand.*—Name, the Νουφαρ, of Dioscorides, given to this plant. The Arabic name is *Naùfar,* according to Förskal.

H, 1. N. *lútea,* Sm. (*common yellow Water-Lily*) ; leaves cordate their lobes approximate, cal. of 5 leaves, stigma expanded entire with from 14—20 rays. *Hook. Scot. i. p.* 169. *Hook. in Fl. Lond. N. S. p.* 141. *Engl. Fl. v. iii. p.* 15.—*Nymphæa lutea, Linn. Engl. Bot. t.* 159.

Lakes and ditches, frequent. *Fl.* July. ♃.—*Flowers* large, smelling somewhat like brandy; which circumstance, in conjunction as I presume, with its flagon-shaped seed-vessels, has led to the name *Brandy-bottle,* by which this plant is known in many parts of England.

2. N. *púmila,* De Cand. (*least yellow Water-Lily*) ; leaves cordate the lobes approximate, stigma (green) with 8 or 9 teeth and as many (yellow) rays, fruit furrowed upwards. *Hook. in Fl. Lond. N. S. t.* 170. *Engl. Fl. v. iii. p.* 16.—*N. Kalmiana, Hook. Scot. i. p.* 169. (*an Aiton ?*)—*N. minima, Engl. Bot. t.* 2292.—*Nymphæa pumila, Hoffm.*

In several Highland lakes of Scotland. Foot of Ben Cruachan, and at Loch Baladren ; *Mr. Borrer.* Loch of Monteith ; *Mr. D. Don.* Near Callander; *Dr. Gillies.* 'Pond at Ross-wood, near Lochlomond ; *Rev. Dr. Stewart.* Aberdeenshire ; *Dr. A. Murray.* Near Aviemore Inn. —Near Wallington house, Northumberland, *Mr. W. C. Trevelyan,* the only place in England where it has yet been discovered. *Fl.* July. Aug. ♃.—I am even now far from certain that this ought not to be united with the American *N. Kalmiana.* All the differences I can find between the two, I have fully detailed in the *Flora Londinensis.*

Helleborus, see page 268.

ORD. II. PENTAGYNIA. *Styles variable,* 2—6.

10. PÆÓNIA. *Linn.* Pæony.

Cal. of 5 leaves. *Pet.* 5—10. *Follicles* 2—5, with many *seeds,* crowned with the bilamellated *stigmas.*—*Nat. Ord.* RANUNCULACEÆ. *Juss.*—Named in honour of the Physician *Pæon,* who is said to have cured Pluto of a wound received from Hercules.

1. P. *corallína*, Retz, (*entire-leaved Pæony*); herbaceous, follicles downy recurved, leaves biternate glabrous, segments ovate entire. *Engl. Bot. t.* 1513. *Engl. Fl. v. iii. p.* 29.

On the island called Steep-Holmes, in the Severn, *Mr. Wright.* Said to have been found near Gravesend. *Gerard. Fl.* May, June ♃.

11. Delphínium. *Linn.* Larkspur.

Cal. coloured, deciduous, irregular, upper leaflet produced at the base into a *spur*. *Pet.* 4; 2 upper ones with appendages included within the spur.—*Nat. Ord.* Ranunculaceæ. *Juss.*—Name, from *Delphinus* or δελφιν, a *Dolphin*, on account of the shape of the upper calycine leaf.

H. 1. D. *Consólida*, Linn. (*Field Larkspur*); stem erect branched, flowers in lax racemes, petals combined, inner spur of one piece, pedicels shorter than the bracteas, capsule glabrous. *Engl. Bot. t.* 1839. *Engl. Fl. v. iii. p.* 30.

Sandy or chalky corn-fields; Suffolk, Kent, and in Cambridgeshire. About Cambridge, at Quay, the hills are quite blue with it; and yet *Ray* does not mention it; *Rev. Prof. Henslow. Fl.* June, July ⊙.

12. Aconítum. *Linn.* Wolf's-bane.

Cal. petaloid, irregular, upper leaflet helmet-shaped: 2 upper petals or nectaries on long stalks, and concealed within the helmet-shaped leaflet.—*Nat. Ord.* Ranunculaceæ. *Juss.*—Name derived, it is said, from *Acone* in Bithynia: or from ακονη, a *rock* or *stone;*

> "Quæ quia nascuntur dura vivacia caute
> Agrestes *Aconita* vocant."—*Ovidii Metam. lib. vii. v.* 418.

1. A. *Napéllus*, Linn. (*common Wolf's-bane or Monk's-hood*); upper leaflet of the calyx arched at the back, spur of the nectary nearly conical bent down, wings of the stamens cuspidate or none, lobes of the leaves cuneate pinnatifid, germens 3—5 glabrous or hairy. *DC.*—*Engl. Fl. v. iii. p.* 31.

About Teme, Herefordshire. A very doubtful native. *Fl.* June, July. ♃.

13. Aquilégia. *Linn.* Columbine.

Cal. of 5 leaves, deciduous, coloured. *Pet.* 5, terminating below in a horn-shaped spur, or nectary.—*Nat. Ord.* Ranunculaceæ. *Juss.*—Named from *Aquila*, an *Eagle*, whose claws the nectaries represent.

H. 1. A. *vulgáris*, Linn. (*common Columbine*); spur of the petals incurved, capsules hairy, stem leafy many-flowered, leaves nearly glabrous, styles as long as the stamens. *Engl. Bot. t.* 97. *Hook. Scot. i. p.* 170. *Engl. Fl. v. iii. p.* 33.

The Bee cannot get the honey out of the long nectary but smelling it out pierces calyx and blossom with his pointed proboscis, he does the same to the Cuphea &c.

Woods and coppices, in several places; probably often the outcast of gardens. *Fl.* June. ♃.—Inner *stamens* frequently imperfect; but not forming a plaited lacerated membrane, as described and figured in *Engl. Bot.*

14. STRATIÓTES. *Linn.* Water-Soldier.

Spatha of 2 leaves. *Cal.* 3-cleft. *Cor.* of 3 petals. *Berry* inferior, angular, with 6 cells, many-seeded.—*Nat. Ord.* HYDROCHARIDEÆ. *Rich.*—Name from στϱατος, an *army*, on account of the numerous sword-like leaves.

H. 1. S. *aloídes*, Linn. (*Water-Soldier*); leaves sword-shaped triangular aculeato-serrate. *Engl. Bot. t.* 379. *Hook. Scot. i. p.* 171. *Engl. Fl. v. iii. p.* 34.

Lakes and ditches, particularly in the fenny parts of Norfolk and Lincolnshire. Rare in the north: probably planted in the Lochs of Duddingston, Forfar, and Cluny, Scotland. *Fl.* July. ♃.—A singular plant, resembling an *Aloe*, with numerous radical *leaves* thrown up from creeping runners, which penetrate far and deep in the mud. *Scape* 4—6 inches long, compressed, two-edged. *Flowers* white, from the compressed 2-leaved *spatha.* Sometimes the *flowers* are diœcious, and sometimes the *stamens* are on the same flower with the 5 or 6 cleft *styles.*

(SEE Reseda in CL. XII. and Helleborus in ORD. POLYGYNIA.)

ORD. III. POLYGYNIA. *Many styles.*

* *Pericarps* 1-*seeded, indehiscent.* *Gen.* 15—19.

15. THALÍCTRUM. *Linn.* Meadow-Rue.

Cal. of 4—5 leaves. *Cor.* 0. *Pericarps* without awns.—*Nat. Ord.* RANUNCULACEÆ. *Juss.*—Name, from θαλλω, *to be green* or *flourishing.*

1. T. *alpínum*, Linn. (*alpine Meadow-Rue*); stem simple nearly leafless, raceme simple terminal, flowers drooping. *Engl. Bot. t.* 262. *Hook. Scot. i. p.* 171. *Engl. Fl. v. iii. p.* 40.

Mountains in the north of England, Wales, and in Scotland, frequent. *Fl.* July. ♃.—*Root-leaves* upon long stalks, biternate, *leaflets* roundish, crenate or lobed, dark green. *Stam.* 10—12. *Germens* 2—4. *Flowers* few.

2. T. *mínus*, Linn. (*lesser Meadow-rue*); leaves 3—4-pinnate, leaflets roundish glabrous trifid and toothed glaucous beneath, panicle diffuse, its branches alternate, flowers mostly drooping. *Jacq. Austr. t.* 419. *Engl. Bot. t.* 11. (*excellent.*) *Hook. Scot. i. p.* 172. *Engl. Fl. v. iii. p.* 41.

β. *Segments* of the *leaves* much acuminated.

Stony pastures, not unfrequent, especially in limestone or chalky countries; but the following species is probably often mistaken for it. Ayrshire, *Mr. Jas. Wilson.* Lismore in the Hebrides, *Rev. C. Smith.* Caroline and Granton Park, Edinburgh, *Mr. Lloyd.* Chedder, Somersets, *Rev. Mr. Berkeley.* Cumberland and Wales, *Mr. W. Wilson.* β. Rocks at Babbicombe, Devon. *Fl.* June, July. ♃.—*Stem* zigzag, about a foot high, mostly glaucous. *Leaflets* small. *Fruit* narrow, ovate, sulcate.

3. T. *május*, Jacq. (*greater Meadow-rue*); leaves 3—4-pinnate, leaflets roundish glabrous trifid and toothed glaucous beneath, panicle diffuse its branches whorled, ultimate pedicels often umbellate, flowers mostly drooping. *Jacq. Austr. t.* 420. (*excellent*). *Hook. Scot. i. p.* 172.

β. *leaflets* much larger. *T. majus, Engl. Bot. t.* 611. *Engl. Fl. v. iii. p.* 42.

Stony pastures in the north. Queen's Ferry near Edinburgh. *Mr. Maughan.* Ayrshire, near Fenwickland, along with the preceding. Belfast, *Mr. Templeton.* β. Durham, *Mr. Robson.* *Fl.* June. ♃.—Twice the size of, and with a more luxuriant habit than the preceding, from which Jacquin, who first described it, takes great pains to distinguish it; but except in the characters above stated, there is the greatest similarity. In Austria, as with us, the two grow in the same situations. Their *fruit* is the same. The *leaves* vary in hue; and I should doubt if the whorled and subumbellate *flowers* can always be depended on. I possess *Mr. Robson's* plant which is figured in *Engl. Bot.;* its leaflets are twice the size of *Jacquin's* original plant.

H. 4. T. *flávum*, Linn. (*common Meadow-rue*); stem erect branched furrowed, leaves bipinnate, leaflets broadly obovate or wedge-shaped trifid, panicle compact subcorymbose, flowers erect. *Engl. Bot. t.* 367. *Hook. Scot. i. p.* 172. *Engl. Fl. v. iii. p.* 42.

β. *leaflets* broadly ovate, almost rotundate.

Banks of rivers and ditches, and in moist meadows. Less frequent in Scotland, and principally found in the vale of Clyde.—β. Isle of Bute. *Dr. Greville.* *Fl.* June, July. ♃.—Two to 3 feet high. *Flowers* very numerous, yellow. Lobes of the *leaves* varying in breadth. In β. the *leaflets* are much broader than usual.

16. CLÉMATIS. *Linn.* Traveller's Joy.

Cal. of 4—6 leaves. *Pet.* 0. *Pericarps* terminated by a long, mostly feathery, awn.—*Nat. Ord.* RANUNCULACEÆ. *Juss.*—Name from κλημα, the *shoot of a vine*, which its long branches somewhat resemble.

1. C. *Vitálba*, Linn. (*common Traveller's Joy*); stem climbing, leaves pinnate, leaflets cordato-ovate inciso-lobate, petioles twining, peduncles rather shorter than the leaves. *Engl. Bot. t.* 612. *Hook. Scot. i. p.* 171. *Engl. Fl. v. iii. p.* 39.

Hedges; abundant in a calcareous soil. Rare, if really indigenous, in the north. About Edinburgh and Callander in Scotland. *Fl.* May, June. ♄.—*Petioles* acting as tendrils. *Flowers* greenish-white, fragrant. *Fruit* very beautiful with its long white feathery *awns.*

17. ANEMÓNE. *Linn.* Anemone.

Involucre of 3 divided leaves, more or less remote from the flower. *Cal.* petaloid, of from 5—9 leaves. *Cor.* 0. *Pericarps* with or without awns.—*Nat. Ord.* Ranunculaceæ. *Juss.*—Named from ανεμος, the *wind;* because many of the species grow in very exposed situations.

1. A. *Pulsatílla*, Linn. (*Pasque-flower Anemone*); leaves as well as the involucre with doubly pinnatifid linear segments, flower inclined, calyx-leaves 6, pericarps with long feathery awns. *Engl. Bot. t.* 51. *Engl. Fl. v. iii. p.* 35.

Dry chalky pastures, in several parts of England. *Fl.* Apr. May. ♃.—*Flowers* purple, externally silky, very handsome.

2. A. *nemorósa*, Linn. (*Wood Anemone*); leaves ternate, leaflets lanceolate lobed and cut, involucre similar to them petiolate, stem single-flowered, calyx-leaves 6 elliptical, pericarps awnless. *Engl. Bot. t.* 355. *Hook. Scot. i. p.* 171. *Engl. Fl. v. iii. p.* 36.

Moist woods and pastures, and upon the high mountains. *Fl.* April, May. ♃.—*Flowers* white, tinged with purple on the outside.

3. A. *apennína*, Linn. (*blue Mountain Anemone*); leaves triternate, segments lanceolate cut and toothed, involucres petiolate ternate and cut, calyx-leaflets 12—14, pericarps without awns. *Engl. Bot. t.* 355. *Engl. Fl. v. iii. p.* 36.

Rare, and probably not indigenous. Wimbledon woods; near Harrow; Luton Hoe, Bedfordshire, and near Berkhamstead, Essex. *Fl.* April. ♃.—*Flowers* light and bright blue.

4. A. *ranunculoídes*, Linn. (*yellow Wood Anemone*); leaves ter-or quinate, leaflets subtrifid cut and toothed, involucres shortly stalked ternate cut and toothed, calyx-segments 5—6 elliptical, pericarps without awns. *Engl. Bot. t.* 1484. *Engl. Fl. v. iii. p.* 38.

Woods, rare; King's Langley, Herts, and Wrotham, Kent. Scarcely a native. *Fl.* April. ♃.—*Flower* brightish yellow.

18. Adónis. Linn. *Pheasant's Eye.*

Cal. of 5 leaves. *Pet.* 5—10, without a nectary. *Pericarps* without awns.—*Nat. Ord.* Ranunculaceæ. *Juss.*—Name:—its deep red colour gave the idea of its being stained by the blood of *Adonis*, who was killed by a boar while hunting.

1. A. *autumnális*, Linn. (*Corn Adonis or Pheasant's-eye*); petals concave connivent scarcely longer than the glabrous calyx, pericarps reticulated collected into an ovate head, stem branched. *Engl. Bot. t.* 308. *Hook. Scot. i. p.* 172. *Engl. Fl. v. iii. p.* 43.

Amongst corn, in several parts of England. About London, Norfolk, Gloucestershire, Glasgow and Dublin. *Fl.* Sept. Oct. ⊙.—*Leaves* thrice compound, with linear segments. *Petals* bright scarlet, such as might well be supposed to have sprung from the blood of Adonis. The French name is "*goutte de sang.*"

19. Ranúnculus. Linn. *Crowfoot.*

Cal. of 5 (rarely 3) leaves. *Pet.* 5 (rarely many), with a nectary at the base. *Pericarps* without awns. [In the pore or nectary of the petals of this, and *Myosurus*, we observe an affinity with the tubular petals (*nectaria*, Sm.) of *Helleborus*, and even of *Trollius*; only, in the two latter, the petals are more changed in shape.]—*Nat. Ord.* RANUNCULACEÆ. *Juss.*—Name from *Rana*, a *Frog*; from the plants' delighting to grow where frogs abound.

* *Pericarps transversely wrinkled. Petals white.*

H. 1. R. *aquátilis*, Linn. (*Water Crowfoot*); stem submersed, leaves capillaceo-multifid, floating ones tripartite their lobes cut, petals obovate larger than the calyx, pericarps glabrous or hispid *Engl. Bot. t.* 101. *Hook. Scot. i. p.* 173. *Engl. Fl. v. iii. p.* 54.

H. β. All the leaves capillaceo-multifid. *R. pantothrix, De Cand.*

γ. All the leaves orbicular in their circumscription, deeply cut into fine capillary segments. *R. circinnatus, Sibth.—R. cæspitosus, De Cand.*

Lakes, ditches, and rivers abundant. *Fl.* May, June. ♃.—Very variable in the length of the *stems* and form of its *leaves*, according to the depth and stillness of the water.

H. 2. R. *hederáceus*, Linn. (*Ivy Crowfoot*); stem creeping, leaves roundish kidney-shaped with 3—5 rounded entire lobes, petals small scarcely longer than the calyx, stamens 5—10, pericarps glabrous. *Engl. Bot. t.* 2003. *Hook. Scot. i. p.* 173. *Engl. Fl. v. iii. p.* 54.

Wet places, shallow pools of water, and where water has stood. *Fl.* through the summer. ♃.

** *Pericarps not transversely wrinkled. Nectary with a small scale. Fl. yellow (except R. alpestris.)*

† *Leaves undivided.*

3. R. *Língua*, Linn. (*great Spear-wort*); leaves lanceolate subserrated sessile semiamplexicaul, stem erect glabrous. *Engl. Bot. t.* 100. *Hook. Scot. i. p.* 173. *Engl. Fl. v. iii. p.* 46.

Marshes, sides of lakes and ditches; not very common. Frequent in the East of England, as Norfolk; Duddingston Loch, Edinburgh; Kinross-shire; near Glasgow, and in the Isle of Arran, Scotland. Several parts of Ireland, *Mr. J. T. Mackay*. *Fl.* July. ♃.—*Stem* 2—3 feet high. *Flowers* large, handsome.

4. R. *Flámmula*, Linn. (*lesser Spear-wort*); leaves linear lanceolate nearly entire petiolate, the lower ones ovato-lanceolate, stem declined at the base and rooting. *Engl. Bot. t.* 387. *Hook. Scot. i. p.* 174. *Engl. Fl. v. iii. p.* 45.

β. much smaller, stem creeping filiform. *R. reptans, Lightf. Scot. p.* 289. *Tab. i.*

Sides of lakes and ditches abundant. β. Margins of the Highland lakes in barren stony places. *Fl.* July, Aug. ♃.

5. R. *gramíneus*, Linn. (*grassy Crowfoot*); leaves linear-lanceolate striated entire, stem erect glabrous, scale of the nectary tubular, root fascicled. *Engl. Bot. t.* 2306. *Engl. Fl. v. iii. p.* 46.

"Brought from N. Wales by Mr. Pritchard." *Withering.*—*Fl.* May, June. ♃.

H. 6. R. *Ficária*, Linn. (*Pilewort Crowfoot, lesser Celandine*); leaves cordate petiolate angular or crenate, calyx of 3 leaves, petals 9. *Engl. Bot. t.* 584. *Hook. Scot. i. p.* 174. *Engl. Fl. v. iii. p.* 46.—*Ficaria ranunculoides, De Cand.*

Pastures, woods, bushy places, &c. *Fl.* April, May. ♃.—*Root* consisting of many long fasciculated *tubers*. *Leaves* petiolate, 2—3, on the 1-flowered stem. *Flowers* glossy, yellow.

†† *Leaves divided. Pericarps smooth. Perennial.*

7. R. *alpéstris*, Linn. (*alpine white Crowfoot*); leaves glabrous orbicular deeply 3-lobed, lobes at the extremity crenate, stem mostly 1-flowered, petals obcordate (white). *Engl. Bot. t.* 2390. *Hook. Scot. i. p.* 173. *Engl. Fl. v. iii. p.* 49.

Sides of rills on the Clova mountains, *Mr. G. Don.* *Fl.* May. ♃.—Four to 5 inches high. *Leaves* mostly radical, petiolate. *Flowers* entirely white, large.

H. 8. R. *auricomus*, Linn. (*Wood Crowfoot*); leaves glabrous, radical ones reniform 3-partite and cut, stem-leaves divided to the base into linear subdentate segments, calyx pubescent shorter than the petals, head of fruit globose. *Engl. Bot. t.* 624. *Hook. Scot. i. p.* 174. *Engl. Fl. v. iii. p.* 47.

Woods and coppices, not unfrequent. *Fl.* April, May. ♃.—Not acrid, as are most of the other *Crowfoots.*

H. 9. R. *scelerátus*, Linn. (*Celery-leaved Crowfoot*); leaves glabrous, radical ones petiolate tripartite, lobes cut very obtuse, upper ones in 3 linear cut segments, calyx glabrous, pericarps collected into an oblong head. *Engl. Bot. t.* 681. *Hook. Scot. i. p.* 174. *Engl. Fl. v. iii. p.* 48.

Sides of pools and ditches. *Fl.* June. ♃.—*Stem* stout, succulent, 1—2 feet high. Lower *leaves* very broad and glossy. *Flowers* extremely small, pale yellow.

10. R. *ácris*, Linn. (*upright Meadow Crowfoot*); calyx spreading, peduncles rounded (not furrowed), leaves tripartite their segments acute trifid and cut, upper ones linear. *Engl. Bot. t.* 652. *Hook. Scot. i. p.* 174. *Engl. Fl. v. iii. p.* 51.

Meadows and pastures, and in mountainous situations. *Fl.* June, July. ♃.

H. 11. R. *répens*, Linn. (*creeping Crowfoot*); calyx spreading, flowerstalks furrowed, scyons creeping, leaves with 3 petiolated leaflets which are 3-lobed or 3-partite and cut. *Engl. Bot. t.* 516. *Hook. Scot. i. p.* 175. *Engl. Fl. v. iii. p.* 51.

Pastures, too frequent. *Fl.* June—Aug. ♃.—Well distinguished by its creeping scyons.

H. 12. R. *bulbósus*, Linn. (*bulbous Crowfoot*); calyx reflexed, peduncles furrowed, stem upright many-flowered, leaves cut into 3 petiolated leaflets which are 3-lobed or 3-partite and cut, root bulbous. *Engl. Bot. t.* 515. *Hook. Scot. i. p.* 175. *Engl. Fl. v. iii. p.* 49.

Meadows and pastures, frequent. *Fl.* May. ♃.—One foot high, hairy. Lobes of the lower *leaves* subovate; upper leaves cut into linear segments.

††† *Leaves divided. Pericarps tuberculated or muricated. Annual.*

H. 13. R. *hirsútus*, Curt. (*pale hairy Crowfoot*); calyx reflexed, stem erect many-flowered hairy, leaves 3-lobed or 3-partite, lobes obtuse cut, root fibrous, pericarps margined and tuberculated. *Engl. Bot. t.* 1501. *Hook. Scot. i. p.* 175. *Engl. Fl. v. iii. p.* 50. —*R. Philonotis*, *Ehrh.*

Meadows and waste ground. *Fl.* June—Oct. ⊙.—Varying extremely in size. When very small it becomes the *R. parvulus*, *Linn. Mant.* and *Sm. Fl. Brit.*

H. 14. R. *arvénsis*, Linn. (*Corn Crowfoot*); calyx spreading, stem erect many-flowered, leaves 3-cleft their lobes generally again 3-cleft into linear entire or bi-tridentate segments, pericarps muricated. *Engl. Bot. t.* 135. *Hook. Scot. i. p.* 175. *Engl. Fl. v. iii. p.* 52.

Corn-fields. *Fl.* June. ⊙.—*Pericarps* very large and prickly. *Flowers* small, pale yellow.—Said to be extremely poisonous and injurious to the cattle in some countries.

H. 15. R. *parviflórus*, Linn. (*small-flowered Crowfoot*); stem spreading, leaves hairy 3-lobed and cut, peduncles opposite the leaves, calyx as long as the petals, pericarps muricated. *Engl. Bot. t.* 120. *Engl. Fl. v. iii. p.* 53.

Corn-fields about London, Norwich, and in the south-west of England. Chelmsford, *Mr. Jonathan Grubb.* Cork, *Mr. Drummond.* Sand-hills between Beldoyle and Howth, Dublin, *Mr. J. T. Mackay.* *Fl.* May, June. ⊙.—Well distinguished by its spreading *stems*, lateral *flower-stalk*, and small narrow *petals*, one or two often wanting.

** *Pericarps many-seeded, dehiscent*, Gen. 20—22.

20. Tróllius. *Linn.* Globe-flower.

Cal. of 5 or many, coloured leaves. *Pet.* 5 or many, small, linear, with an obscure depression above the contracted base. *Capsules* or *follicles* many-seeded.—*Nat. Ord.* Ranunculaceæ. *Juss.* —Name, said to be " derived from *trol* or *trolen*, a *ball* or *globe* in old German, and bearing the same meaning as our English word *Globe-flower*.

H. 1. T. *europǽus*, Linn. (*Mountain Globe-flower*); calyx of about 15 concave erect leaves, petals the same length as the stamens. *Engl. Bot. t.* 28. *Hook. Scot. i. p.* 176. *Engl. Fl. v. iii. p.* 56.

Moist mountain pastures, in the north of England and north of Ireland. Wales and Scotland. *Fl.* June, July. ♃.—*Leaves* in 5, deep segments, which are again cut and serrated. *Flowers* large, handsome. *Petals* often partly concealed by the spreading of the *stamens*.

Pentagynia in 3e edition

21. Helléborus. *Linn.* Hellebore.

see page 260

Cal. of 5, persistent leaves. *Pet.* 8—10, small, tubular, 2-lipped, nectariferous. *Pericarps* or *follicles* nearly erect, many-seeded.—*Nat. Ord.* Ranunculaceæ. *Juss.*—Name; ελειν, to *injure*, and βορα, *food*, from the poisonous nature of the plant.

H, 1. H. *víridis*, Linn. (*green Hellebore*); stem few-flowered leafy, leaves digitate, calyx spreading. *Engl. Bot. t.* 200. *Hook. Scot. i. p.* 176. *Engl. Fl. v. iii. p.* 57.

Woods, thickets and hedges, especially in a chalky soil, in England: but often the outcast of gardens, as at Dunglass Glen and Laswade, Scotland. *Fl.* Apr. May. ♃.—One foot high. *Leaves* annual, large, on a broad stalk; upper ones sessile: segments linear-lanceolate, serrated at the extremity. *Cal.* large, greenish-yellow. This and the following have been often employed medicinally instead of the true, *ancient* or *Greek Hellebore*, *H. officinalis*, Sibth. and Smith.

H. 2. H. *fœ́tidus*, Linn. (*stinking Hellebore*); stem many-flowered leafy, leaves pedate, calyx converging. *Engl. Bot. t.* 613. *Hook. Scot. i. p.* 176. *Engl. Fl. v. iii. p.* 58.

Pastures and thickets, especially in chalky counties, in England. Blantyre and Barncluish; and by the Doune, Ayr, *Mr. Jas. Wilson*, on the west, and near Anstruther on the east of Scotland: scarcely indigenous. *Fl.* Apr. ♃.—A bushy plant, 2 feet high. *Leaves* evergreen, uppermost ones gradually becoming *bracteas*. *Flowers* globose; *calyx* tipped with a purple tinge. Fetid and powerfully cathartic.

22. Cáltha. *Linn.* Marsh-marigold.

Cal. of 5 or more petaloid leaves. *Pet.* none. *Pericarps* several, compressed, spreading, with many seeds.—*Nat. Ord.* Ranunculaceæ. *Juss.*—Name from καλαθος, a *cup*, which its flowers resemble.

H. 1. C. *palústris*, Linn. (*common Marsh-marigold*); leaves orbiculari-cordate or reniform crenate, calyx-leaves 5—6 oval. *Engl. Bot. t.* 506. *Hook. Scot. i. p.* 176. *Engl. Fl. v. iii. p.* 59.

β. Stem creeping, leaves cordato-triangular sharply crenate. *Hook. Scot. i. p.* 176.—*C. radicans*, *Forst.*—*Engl. Bot. t.* 2175. *Engl. Fl. v. iii. p.* 60.

Marshy places, common. β. not unfrequent in Scotland, especially in mountainous regions; but I have rarely seen the wild plant with leaves so decidedly triangular as a plant long cultivated in the Edinburgh Bot. Garden.—*Fl.* March—June. ♃.

CLASS XIV. DIDYNAMIA.

36 – 38

4 stam.; 2 longer than the other 2.

ORD. I. GYMNOSPERMIA. *Seeds 4, apparently naked, i. e. closely covered by the pericarp.* (All belonging to the *Nat. Ord.* LABIATÆ. *Juss.*)

TRIBE I. *Tube of the Cor. scarcely longer than the cal. Its limb 4—5-cleft, nearly regular. Stam. distant.* MENTHOIDEÆ. *Benth.**—Gen. 1.

1. MÉNTHA. *Linn.* Mint.

Cal. equal, 5-toothed, its mouth naked or rarely villous. *Cor.* nearly regular, 4-fid, its tube very short. *Stam.* distant, exserted or included. *Filaments* naked. *Anthers* with 2 parallel cells. *Benth.*—Name; *μινθα* or *μινθη*, an ancient Greek name.

H. 1. M. *sylvéstris*, Linn. (*Horse Mint*); leaves ovato-oblong very acute unequally serrated downy hoary beneath, spikes almost cylindrical scarcely interrupted, bracteas subulate, calyx very hairy. *Engl. Bot. t.* 686. *Engl. Fl. v. iii. p.* 73.

Moist waste ground; not uncommon in England. Siedlaw hills, Forfarshire; *Mr. Drummond,* (perhaps naturalized). Ireland, *Mr. J. T. Mackay. Fl.* Aug. Sept. ♃.—Mr. Drummond's specimens, and others gathered by Mr. Banks near Plymouth, have the partial *bracteæ* much longer than the *flower*, and far more conspicuous than in my other specimens and the figure in *Engl. Bot.*

2. M. *rotúndifolia*, Linn. (*round-leaved Mint*); leaves elliptical obtuse sharply serrated wrinkled downy shaggy beneath, spikes interrupted, bracteas lanceolate, calyx somewhat hairy. *Engl. Bot. t.* 446. *Engl. Fl. v. iii. p.* 74.

Moist places, in waste ground; not unfrequent in many parts of England. Anglesea, but scarcely wild; *Mr. W. Wilson.* Near Auchindenny, Scotland; *Mr. Lloyd.* Near Cove, Ireland; *Mr. J. T. Mackay.*

H. 3. M. *víridis*, Linn. (*Spear Mint*); leaves lanceolate acute glabrous serrated sessile, spikes interrupted, bracteas setaceous somewhat hairy as well as the calyx, pedicels glabrous. *Engl. Bot. t.* 2424. *Engl. Fl. v. iii. p.* 75.

Marshy places in many parts of England, according to Smith. Cairnhill, near Edinburgh; *Mr. Lloyd. Fl.* Aug. ♃.—Cultivated for culinary purposes, being aromatic and pungent.

4. M. *piperíta*, Sm. (*Pepper-Mint*); leaves ovato-lanceolate

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* I have availed myself of the new and excellent arrangement of the *Labiatæ* recently published in the *Bot. Register,* t. 1282, et seq.

strongly serrated acute slightly hairy stalked, spikes interrupted, bracteas lanceolate, calyx glandular quite glabrous at the base. *Engl. Bot. t.* 687. *Engl. Fl. v. iii. p.* 76.

Watery places in many parts of England; but often the outcast of gardens. Alford, Aberdeenshire; *Dr. A. Murray*. *Fl.* Aug. Sept. ♃. Much cultivated for the sake of its essential oil, which resides in minute glands, conspicuous on the *leaves* and especially on the *cal.* Mr. W. Wilson finds a *var.* near Warrington in which these glands are not visible even with a microscope: "its odour is sweet and mild, without the pungency of the common sort cultivated in gardens."

5. M. *citráta*, Ehrh. (*Bergamot Mint*); leaves broadly ovate or cordate strongly serrated acute glabrous on both sides, spikes capitate very obtuse, calyx and pedicels quite glabrous. *Engl. Fl. v. iii. p.* 78.—*M. odorata*, *Sole.*—*Engl. Bot. t.* 1025.

Watery places, rare. Cheshire; near Bedford and in North Wales. *Fl.* Aug. Sept. ♃.—I have only seen garden specimens of this. It has much the habit of *M. hirsuta*, but is quite glabrous in every part, and "has the smell of the *Bergamot Orange* or of the herbage of *Monarda didyma*." *Sm.*

H. 6. M. *hirsúta*, Linn. (*hairy Mint*); leaves ovate serrated pubescent stalked, flowers capitate or whorled, calyx hairy, pedicels with reflexed hairs. *Engl. Bot. t.* 447. *Hook. Scot. i. p.* 180. *Engl. Fl. v. iii. p.* 78.—*M. sativa, Linn.*—*Engl. Bot. t.* 448.

Banks of rivers and marshes, frequent. *Fl.* Aug. Sept. ♃.—Very variable.—Sometimes the *flowers* are capitate, sometimes whorled, and sometimes the whorls are placed so close on the extremity of the branches as to form a *spike*. *Anthers* varying in length.

7. M. *acutifólia*, Sm. (*fragrant sharp-leaved Mint*); leaves ovato-lanceolate tapering at each end, flowers whorled, calyx hairy all over, hairs of the flower-stalks spreading. *Engl. Bot. t.* 2415. *Engl. Fl. v. iii. p.* 81.

Banks of the Medway. *Fl.* Sept. ?—Very closely related to the last species (*Sm.*), and probably a mere variety.

8. M. *rúbra*, Sm. (*tall red Mint*); "stem upright zigzag" (Sm.) leaves ovate serrated subglabrous stalked, flowers whorled, pedicels and lower part of the calyx quite glabrous, teeth hairy. *Engl. Bot. t.* 1413. *Hook. Scot. i. p.* 180. *Engl. Fl. v. iii. p.* 82.

Wet places in hedges and thickets and banks of rivers. *Fl.* Sept. ♃. —Four to 5 feet high. *Flowers* purplish red, with linear, somewhat hispid *bracteas* at the base.

9. M. *gentílis*, Linn. (*bushy red Mint*); "flowers whorled, leaves ovate, stem much branched spreading, flower-stalks and base of the bell-shaped calyx nearly glabrous." *Sm.*—*Engl. Bot. t.* 2118. (not 449.) *Hook. Scot. i. p.* 181. *Engl. Fl. v. iii. p.* 83.

Watery places, rare. North Wales. Holt in Norfolk; and in Somersetshire. (*Engl. Fl.*) I have seen no Scottish specimens of this plant. Mine are from the Holt station, such as are figured in *Engl. Bot.* On comparing them with my Yorkshire specimen of *M. rubra* from Mr.

Turner, I find them to be the same; and was hence led in *Fl. Scot.* to doubt of their real difference. In this I am corrected by Sir James E. Smith. The present has much smaller *flowers* than the last, not so much confined to the upper axils as in *M. rubra.*—Cultivated for its agreeable scent, which is improved and rendered more powerful by a dry soil.

10. M. *grácilis*, Sm. (*narrow-leaved Mint*); "flowers whorled, leaves lanceolate nearly sessile, stem upright much branched, flower-stalks and base of the calyx quite smooth." *Engl. Fl. v. iii. p.* 84. —*M. gentilis*, *Engl. Bot. t.* 449.

Watery places on moist meadows. (*Sm.*) *Fl.* Aug. Sept. ♃.—Apparently very nearly allied to the preceding, and first published by Sir James Smith as *M. gentilis.*

H. 11. M. *arvénsis*, Linn. (*Corn-Mint*); flowers whorled, leaves ovate hairy serrated, calyx campanulate and clothed with spreading hairs. *Engl. Bot. t.* 2119. *Hook. Scot. i. p.* 181. *Engl. Fl. v. iii. p.* 85.

Corn-fields. *Fl.* Aug. Sept. ♃.—The short and campanulate *calyx* well distinguishes this species. *Peduncles* glabrous or hairy. The smell has been compared to that of decayed cheese.

12. M. *agréstis*, Sole, (*rugged Field Mint*); "flowers whorled, leaves somewhat heart-shaped strongly serrated rugose, stem erect, calyx bell-shaped covered all over with horizontal hairs. *Engl. Bot. t.* 2120. *Engl. Fl. v. iii. p.* 87.

Corn-fields and neglected gardens, Somersetshire, and plentiful in Sussex, *Mr. Borrer*. *Fl.* Aug. Sept. ♃.—"Whether this be a distinct species or not" (from the preceding) "I will not dare to assert, nor do I know any person competent to decide the question." *Sm.*

H. 13. M. *Pulégium*, Linn. (*Penny-royal*); flowers whorled, leaves ovate downy obtuse subcrenate, stem prostrate, flowerstalks slightly and calyx very pubescent, teeth of the latter fringed. *Engl. Bot. t.* 1026. *Hook. Scot. i. p.* 181. *Engl. Fl. v. iii. p.* 87.

Wet commons and margins of brooks, England and south of Ireland. Rare in Scotland and probably not indigenous. *Fl.* Aug. Sept. ♃.—The smallest of the genus, readily known by its prostrate *stems* and small frequently recurved *leaves*, both of which are thickly covered with short hairs. Smell powerful. Much employed medicinally.

TRIBE II. *Corolla two-lipped; the tube about as long as the calyx; lips nearly equal in length; upper one erect, somewhat flat. Stam. distant, anthers 2-celled, cells parallel* (*in the British Genera.*) SATUREINEÆ. *Benth.* Gen. 2, 3.

2. THYMUS. *Linn.* Thyme.

Flowers whorled or capitate. *Cal.* with 10 ribs, tubular, 2-lipped, upper *lip* 3-toothed, lower one bifid, the throat hairy. *Cor.* with the upper *lip* erect, nearly plane, notched, lower patent and trifid. *Benth.*—Name, θυμος, *strength*, from its balsamic odour, strengthening the animal spirits.

H. 1. T. *Serpýllum*, Linn. (*wild Thyme*); flowers capitate, stems branched decumbent, leaves plane ovate obtuse entire petiolate more or less ciliated at the base. *Engl. Bot. t.* 1514. *Hook. Scot. i. p.* 185. *Engl. Fl. v. iii. p.* 107.

Hills and dry pastures, abundant. *Fl.* July, Aug. ♃.—Variable in the hairiness of the *leaves*,—which are sometimes all over hoary,—in the size of the plant, and scent of its foliage, which sometimes approaches to that of Lemon. *Flowers* purple.—The other British species of *Thymus* of Linn. and Smith are referred to the Genera *Acinos* and *Calamintha.*

3. ORÍGANUM. *Linn.* Marjoram.

Spikes (*or Heads*) of flowers 4-sided, resembling a *catkin*, imbricated with bracteas. *Cal.* various. *Cor.* with upper *lip* erect, nearly plane, lower one patent, trifid. *Benth.*—Name; ορος, a *hill*, and γανος, *joy*, from the dry hilly places of which the species are the ornament. *Marjoram* is corrupted from *marjorana*, (*Origanum marjorana*), and that again from the *marjamie*, (*or Màryamych*), of the Arabs.

H. 1. O. *vulgáre*, Linn. (*common Marjoram*); heads of flowers roundish panicled crowded glabrous, bracteas ovate longer than the calyx, leaves ovate entire. *Engl. Bot. t.* 1143. *Hook. Scot. i. p.* 184. *Engl. Fl. v. iii. p.* 106.

Dry hilly and bushy places, not unfrequent. *Fl.* July, Aug. ♃.—*Stems* 1 foot high. *Flowers* purple, and the *bracteas* tinged with the same colour. Fragrant and aromatic.

> "The Thyme strong-scented 'neath one's feet,
> And *Marjoram* so doubly sweet."—*Clare.*

TRIBE III. *Upper lip of the Corolla abbreviated or apparently wanting; lower one longer, patent. Stamens ascending, much exserted.*—AJUGOIDEÆ. *Benth.* Gen. 4—5.

4. TEUCRIUM. *Linn.* Germander.

Cal. tubular, 5-toothed, nearly equal or 2-lipped. *Cor.* with the tube shorter than the cal.; upper *lip* bipartite, lower one patent, 3-fid. *Stam.* much exserted. Cells of the *Anthers* confluent, spreading.—Named from *Teucer*, Prince of Troy, who first employed this plant medicinally.

H. 1. T. *Scorodónia*, Linn. (*Wood Germander or Sage*); leaves cordate petiolate downy crenate, flowers in lateral and terminal one-sided racemes, stem erect. *Engl. Bot. t.* 1543. *Hook. Scot. i. p.* 180. *Engl. Fl. v. iii. p.* 68.

Woods and dry stony places, frequent. *Fl.* July, Aug. ♃.—*Stems* 1—2 feet high. *Leaves* very much wrinkled. *Flowers* yellowish-white. *Stam.* purplish red.—The plant is extremely bitter and has been sometimes substituted for Hops.

H. 2. T. *Scórdium*, Linn. (*Water Germander*); leaves oblong sessile downy serrated, flowers few in the axils stalked, stem procumbent. *Engl. Bot. t.* 828. *Engl. Fl. v. iii. p.* 68.

Low wet meadows, rare. Cambridgeshire; near Highbridge, Oxfordshire.—Near Castle Lyons, and Portumna bridge, Tipperary, Ireland; *Mr. J. T. Mackay*. *Fl.* July, Aug. ♃.—*Flowers* rather small, pale purple.—Formerly much employed in medicine.

H. 3. T. *Chamædrys*, Linn. (*Wall Germander*); leaves ovate inciso-serrate tapering into a footstalk, flowers axillary in threes, stem ascending. *Engl. Bot. t.* 680. *Hook. Scot. i. p.* 180. *Engl. Fl. v. iii. p.* 69.

Borders of fields and mostly ruined walls; Winchelsea castle, Sussex; Gateshead, Durham; city-walls of Norwich, plentiful.—Near Forfar and Kelly Angus; in Methven wood, Perthshire, *Mr. Jas. Macnab*. Near Cork, *Mr. Drummond*.—*Fl.* July. ♃.—*Flowers* reddish-purple, large, handsome, mostly in the terminal axils.

5. AJÚGA. *Linn.* Bugle.

Cal. ovate, nearly equal, 5-fid. *Cor.* with the tube exserted, upper *lip* short, erect, entire or emarginate, lower one larger, patent, trifid. *Stam.* 4, ascending, protruded above the upper lip.—Name altered from *Abiga*, (*abigo*, to drive away) of the Latins, a medicinal plant allied to this.

H. 1. A. *réptans*, Linn. (*common Bugle*); glabrous or downy, stem solitary with creeping scyons. *Engl. Bot. t.* 489. *Hook. Scot. i. p.* 179. *Engl. Fl. v. iii. p.* 65.

Moist pastures and woods, abundant. *Fl.* May, June. ♃.—*Leaves* broadly ovate, more or less crenate, lower ones and those on the runners tapering into a footstalk. *Flowering stem* erect, with sessile *leaves*. *Flowers* in whorls, blue (sometimes white or flesh coloured) from the axils of the upper leaves or bracteas, which are often purplish.

2. A. *pyramidális*, Linn. (*pyramidal Bugle*); hairy, whorls crowded into a pyramidal and tetragonal form, scyons none, radical leaves obovate very large more or less crenate. *Engl. Bot. t.* 1270. *Hook. Scot. i. p.* 179. *Engl. Fl. v. iii. p.* 66.

Highland pastures, rare. Ben Nevis; plentiful at the Burn of Killigower and on the Ord of Caithness; *Dr. Hope*. Tor Aichaltie, near Brahan Castle, Ross-shire; *Mr. Gibb*. Appin, *Captain Carmichael*. Strath Erric, Inverness-shire; *Dr. Maclachlan*. *Fl.* June, ♃.—Four to 6 inches high. *Leaves* tapering gradually from the base upwards.

3. A. *alpína*, Linn. (*alpine Bugle*); leaves nearly glabrous unequally toothed all nearly of the same size, whorls of flowers rather distant. *Engl. Bot. t.* 477. *Hook. Scot. i. p.* 179. *Engl. Fl. v. iii. p.* 65.

Mountains; rare. Wales, Derbyshire, Durham. Aberdeenshire, not uncommon; *D. Don*.—Of this I have seen no British specimens. It seems to be variable in the toothing of the *leaves* and in the middle segments of the lower *lip* being entire or notched.

H. 4. A. *Chamæpitys*, Sm. (*ground-Pine or yellow Bugle*); hairy, stems spreading, leaves tripartite their segments linear-filiform, flowers axillary solitary shorter than the leaves. *Engl. Bot. t.* 77. *Engl. Fl. v. iii. p.* 67.—*Teucrium Chamæpitys*, *Linn.*

Sandy or gravelly fields; not unfrequent in Kent. Triplow Heath, Cambridgeshire, and Purfleet, Essex. *Fl.* Apr. May. ⊙.—Very different in habit from the preceding species. *Flowers* yellow, spotted with red and nestled among the narrow segments of the *leaves*, which almost resemble those of a Pine; the lowermost ones however are much broader. *Stem* reddish purple, glutinous.

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TRIBE IV. *Cor. 2-lipped. Stamens ascending, shorter than the upper lip. Anthers free. Fruit dry.* NEPETEÆ.—*Benth.* Gen. 6—21.

* *Cal. equal or oblique, 5—10 toothed, not two-lipped.*— Gen. 6—15.

† *Stamens longer than the tube of the corolla. Anthers perfect.*—Gen. 6—14.

6. BALLÓTA. *Linn.* Horehound.

Cal. salver-shaped, equal, with 10 ribs and 5 broad, mucronated teeth, naked within. *Cor.* with the upper *lip* erect, concave; lower one trifid, middle lobe the largest, emarginate. *Cells* of the Anthers spreading.—Name, βαλλωτη, from βαλλω to reject, on account of its disagreeable smell.

H. 1. B. *nígra*, Linn. (*black Horehound*); leaves ovate crenate-serrate, teeth of the calyx shortly acuminate patent longer than the tube of the corolla. *Engl. Bot. t.* 46. *Hook. Scot. i. p.* 184. *Engl. Fl. v. iii. p.* 101.

Waste places near towns and villages, less frequent in the north. *Fl.* July, Aug. ♃.—Two to three feet high. *Flowers* in whorls, purple, rarely white. Whole plant fetid.—Wallroth and other German writers have a 2d species, *B. alba*, *Linn. Sp. Pl. ed. ii. p.* 814. (*B. vulgaris*, *Link.*) distinguished from this by its longer and more erect teeth to the cal. and longer tube to the corolla: but its character seems to be scarcely sufficient to constitute a good species.

7. LEONÚRUS. *Linn.* Motherwort.

Cal. with 5 or 10 ribs, equal, with 5 subulate teeth, the throat naked. *Cor.* with the upper *lip* very hairy above, entire; lower one patent, trifid. *Anthers* sprinkled with shining dots.—Name λεων, a *Lion*, and ουρα, a *tail*, from a fancied resemblance in the plant to a Lion's tail.

1. L. *Cardíaca*, Linn. (*Motherwort*); leaves petiolate, lower ones cuneato-lanceolate 3-lobed, upper ones entire. *Engl. Bot. t.* 286. *Hook. Scot. i. p.* 184. *Engl. Fl. v. iii. p.* 104.

Hedges and waste places, in several parts of England. About Edinburgh in Scotland. South of Ireland. *Fl.* Aug. ♃.—*Stem* 3 feet high, branched. *Flowers* in crowded whorls, white with a reddish tinge; upper lip of *cor.* shaggy. *Cal.* with pungent, spreading teeth.

8. Galeóbdolon. *Huds.* Weasel-snout.

Cal. campanulate, 5-ribbed, nearly equal, 5-toothed. Upper *lip* of the *Cor.* incurved, arched, entire; lower one smaller, in 3 nearly equal, acute lobes.—Name, γαλεη, a weasel, and βδολος, a fetid scent, and formerly considered synonymous with *Galeopsis*, from which genus it is now removed.

H. 1. G. *luteúm*, Huds. (*yellow Weasel-snout* or *Archangel*). *Engl. Bot. t.* 787. *Hook. Scot. i. p.* 183. *Engl. Fl. v. iii. p.* 96.

Woods and shady places, England and the south of Scotland, and in Ireland. *Fl.* May, June. ♃.—One foot or more high. *Leaves* ovato-acuminate, petiolate, deeply serrated. *Flowers* whorled, yellow; lower *lip* orange and spotted.

9. Galeópsis. *Linn.* Hemp-nettle.

Cal. campanulate, equal, 5-toothed, teeth mucronate. *Cor.* with the tube exserted, the throat inflated; upper *lip* arched; lower one with 3 unequal lobes, having two teeth on its upper side. —Name, γαλεη, a *weasel*, and οψις *aspect* or *appearance*; from the resemblance in the lips of the flower to the snout of an animal.

H. 1. G. *Ládanum*, Linn. (*red Hemp-nettle*); stem not swollen below the joints, leaves lanceolate subserrate hairy, upper lip of the corolla slightly crenate. *Engl. Bot. t.* 884. *Hook. Scot. i. p.* 182. *Engl. Fl. v. iii. p.* 93.

Dry gravelly or chalky corn-fields, or limestone rubbish. Rare in Scotland. *Fl.* Sept. Oct. ⊙.—*Stem* 10—12 inches high, with opposite branches. *Leaves* rather small, petiolate, hairy. *Flowers* purplish rose-colour.

H. 2. G. *villósa*, Huds. (*downy Hemp-nettle*); stem not swollen below the joints, leaves ovato-lanceolate serrated soft and downy, upper lip of the corolla deeply notched. *Engl. Bot. t.* 2353. *Engl. Fl. v. iii. p.* 94.

Sandy corn-fields, rare. Yorkshire, Lancashire, Nottinghamshire, and Bangor in Wales.—*Fl.* July, Aug. ⊙.—*Flowers* large, pale yellow.

H. 3. G. *Tetráhit*, Linn. (*common Hemp-nettle*); stem hispid swollen below the joints, leaves ovate hispid serrated, corolla with the upper lip erect ovate entire. *Engl. Bot. t.* 207. *Hook. Scot. i. p.* 182. *Engl. Fl. v. iii. p.* 94.

Corn-fields and cultivated grounds, frequent. *Fl.* Aug. ⊙.—One foot to two feet high. *Flowers* purplish, or often white.

H. 4. G. *versícolor*, Curt. (*large-flowered Hemp-nettle*); stem hispid swollen below the joints, leaves ovate hispid serrated, corolla with the upper lip horizontal inflated. *Engl. Bot. t.* 667. *Hook. Scot. i. p.* 182. *Engl. Fl. v. iii. p.* 95.

Corn-fields; Norfolk: but rare in England. Ireland, *Mr. J. T. Mackay.* Abundant in Scotland, especially in the Highlands. *Fl.* July, Aug. ⊙.—Very different from the last, (though the distinguishing marks are difficult to be described,) and very beautiful. Often 2—3 feet high, with large rank foliage. *Flowers* showy, yellow, with a broad purple spot on the lower lip.

10. LÁMIUM. *Linn.* Dead-nettle.

Cal. campanulate, 10 ribbed, 5-toothed, nearly equal. *Cor.* with the throat inflated, upper *lip* erect, entire, arched, lower one patent, 2-lobed, with one or two teeth on each side at the base. —Name from λαιμος, the *throat*, on account of the shape of the flower.

H. 1. L. *álbum*, Linn. (*white Dead-nettle*); leaves cordato-acuminate deeply serrated stalked, whorls of about 20 (white) flowers. *Engl. Bot. t.* 768. *Hook. Scot. i. p.* 181. *Engl. Fl. v. iii. p.* 90.

Borders of fields and waste places, abundant. *Fl.* June, July. ♃.—*Flowers* large, white, rarely tinged with blush.

2. L. *maculátum*, Linn. (*spotted Dead-nettle*); leaves cordato-acuminate inciso-serrate stalked, whorls of about 10 (purple) flowers. *Engl. Bot. t.* 2550. *Hook. Scot. i. p.* 182. *Engl. Fl. v. iii. p.* 90.

Banks, naturalized: near Bristol, and at Bayswater, by London. Woods in Scotland, rare. *G. Don. Fl.* Apr. ♃.—*Flowers* large, constantly purple, fewer in a whorl, otherwise very nearly allied to the preceding. The *leaves* are usually characterized as having a large central white spot, which Smith says appears principally in the winter and early spring; but they are not represented so in the figure in *E. Bot.* and the plant is widely different from what is cultivated as *L. maculatum* in our gardens, which has the leaves vastly smaller, with a large white spot on all of them, and is well figured as the true *maculatum* in Reichenbach's *Iconogr. Bot. t.* 215. The *Engl. Bot. L. maculatum* is, in the same work, referred to *L. rugosum, Ait.* at *t.* 217, which certainly well represents our plant.

3. L. *purpúreum*, Linn. (*red Dead-nettle*); leaves cordate obtuse crenato-serrate stalked the uppermost crowded together, "corolla with the tube bearded within." *Engl. Bot. t.* 1933. *Hook. Scot. i. p.* 182. *Engl. Fl. v. iii. p.* 91.

Borders of fields and in hedges, plentiful, *Fl.* May—Sept. ⊙.—*Leaves*, especially the upper ones, with a silky hairiness, and a purplish tinge on the floral ones.

4. L. *incísum*, Willd. (*cut-leaved Dead-nettle*); leaves broadly cordate or deltoideo-cuneate deeply inciso-crenate stalked, the

uppermost crowded, "corolla with the tube naked within." *Engl. Bot. t.* 1953. *Hook. Scot. i. p.* 182. *Engl. Fl. v. iii. p.* 91.

Cultivated and waste ground, growing very large in the Hebrides. *Fl.* May, June. ⊙.—Nearly allied to the last.

H. 5. L. *amplexicáule*, Linn. (*Henbit-Nettle*); leaves broadly cordate very obtuse deeply inciso-crenate stalked, the floral ones sessile embracing the stem. *Engl. Bot. t.* 770. *Hook. Scot. i. p.* 182. *Engl. Fl. v. iii. p.* 92.

Waste places, sandy fields and gardens. *Fl.* March—June. ⊙.—*Corolla* of a fine deep rose colour, with a very slender tube.

11. Betónica. *Linn.* Betony.

Cal. ovate, 10-ribbed, teeth equal, awned. *Cor.* with the tube exserted, cylindrical; upper *lip* ascending; lower one patent trifid, its middle lobe entire, or nearly so.—Name, altered from *Bentonic*, in Celtic: *Ben*, meaning *head*, and *ton*, *good*. Its properties are cephalic. "Sell your coat and buy Betony!" Old proverb. much used in Spain.

H. 1. B. *officinális*, Linn. (*Wood Betony*); spike interrupted short, leaves cordato-oblong crenate, middle lobe of the lower lip of the corolla somewhat notched. *Engl. Bot. t.* 1142. *Hook. Scot. i. p.* 183. *Engl. Fl. v. iii. p.* 97.

Woods and thickets, frequent; not common in Scotland. *Fl.* July, Aug. ♃.—*Stem* 1—2 feet high, hairy; with few *leaves*, the lowermost ones on long *footstalks*; upper ones oblong, sessile. *Spikes* oblongo-ovate.

12. Stáchys. *Linn.* Woundwort.

Cal. subcampanulate, 10-ribbed, teeth 5, nearly equal, acuminate. *Cor.* with the tube as long as the calyx; upper *lip* mostly arched entire; lower one 3-lobed, with the 2 lateral lobes reflexed. This genus scarcely differs from *Betonica* but in the shorter tube of the corolla.—Name; σταχυς, a *spike*, from the nature of the inflorescence.

H. 1. S. *sylvática*, Linn. (*Hedge Woundwort*); whorls of 6 flowers, leaves cordato-ovate acute stalked. *Engl. Bot. t.* 416. *Hook. Scot. i. p.* 183. *Engl. Fl. v. iii. p.* 98.

Woods and shady places. *Fl.* July, Aug. ♃.—Two to 3 feet high, hairy. *Leaves* truly cordate and tapering from below the middle to a point, in which respect it differs from the following. *Flowers* purple; *whorls* of about 6 flowers.

2. S. *ambígua*, Sm. (*ambiguous Woundwort*); whorls of 6 flowers, leaves oblongo-cordate acute stalked. *Engl. Bot. t.* 2089. *Hook. Scot. i. p.* 183. *Engl. Fl. v. iii. p.* 99.

Fields and waste places. Abundant in Scotland, especially in the west Highlands. Ireland. Leicestershire, (*Sm.*) *Fl.* Aug. Sept. ♃.—Hairy with soft, silky hairs, especially about the stem. Appears almost intermediate between the preceding and the following. It is found in Germany and Sweden.

H. 3. S. *palústris*, Linn. (*Marsh Woundwort*); whorls of 6 or more flowers, leaves linear lanceolate mostly sessile and semi-amplexicaul. *Engl. Bot. t.* 1075. *Hook. Scot. i. p.* 183. *Engl. Fl. v. iii. p.* 99.

River-banks and watery or moist places, frequent. *Fl.* Aug. ♃.—Mr. Borrer finds, at Siddlesham, this plant, with broader, shortly-stalked *leaves*, and hence approaching to *S. ambigua.*

H. 4. S. *germánica*, Linn. (*downy Woundwort*); whorls many-flowered, leaves oblongo-ovate crenate densely silky, stem erect woolly. *Engl. Bot. t.* 829. *Engl. Fl. v. iii. p.* 100.

Fields and hedges in England, on a limestone soil, and chiefly in Oxfordshire and Bedfordshire. (*Sm.*) I have specimens from Ducklington, Berks; gathered by *Mr. Bicheno. Fl.* Sept. ♃.—Remarkable for its dense covering of silky hairs or wool; frequently cultivated in gardens.

5. S. *arvénsis*, Linn. (*Corn Woundwort*); whorls of 6 flowers, stem weak, leaves cordate obtuse crenate slightly hairy, corolla scarcely longer than the calyx. *Engl. Bot. t.* 1154. *Hook. Scot. i. p.* 183. *Engl. Fl. v. iii. p.* 100.

Dry corn-fields, frequent. *Fl.* July, Aug. ⊙.—Distinguished by its small size, weak *stems*, small and obtuse mostly stalked *leaves*, and the pale purplish *flowers*, which scarcely exceed the calyx in length. *

13. NÉPETA. *Linn.* Cat-mint.

Cal. tubular, many-(15-) ribbed, its mouth a little oblique, 5-toothed. *Cor.* with the tube exserted; upper *lip* emarginate; lower 3-fid, the lateral lobes reflexed, the middle one broad, concave, notched.—Name, some say from *Nepi*, a town in Italy; others from *Nepa*, a *scorpion*, whose bite the plant was considered to cure.

1. N. *Catária*, Linn. (*Cat-mint*); flowers in spiked subpedunculated whorls, leaves stalked cordate dentato-serrated. *Engl. Bot. t.* 137. *Hook. Scot. i. p.* 180. *Engl. Fl. v. iii. p.* 70.

Hedges and waste places, especially in a chalky or gravelly soil in England: rare in Scotland; hedges near Craig Nethan Castle, Glasgow, and between Culross and Kincardine. At Rathfarnan; and by the Shannon, opposite Limerick, Ireland; *Mr. J. T. Mackay. Fl.* July, Aug. ♃.—*Stems* 2—3 feet high, downy, as well as the *leaves* and whitish. *Flowers* white, tinged and spotted with rose colour. *Anthers* reddish.

14. GLECHÓMA. *Linn.* Ground-Ivy.

Cal. tubular, many-(15-) nerved, equal, 5-toothed. *Cor.* with the tube exserted; upper *lip* bifid, lower 3-lobed, middle lobe emarginate, plane. *Anthers*, before bursting, approaching in pairs and forming a cross.—Name, γληχων, given by the Greeks to a kind of *Thyme.*

H. 1. G. *hederácea*, Linn. (*Ground-Ivy*); leaves reniform crenate. *Engl. Bot. t.* 853. *Hook. Scot. i. p.* 181. *Engl. Fl. v. iii. p.* 88.

* Stachys annua. Appen. 18..

Hedges and waste places, frequent. *Fl.* April, May. ♃.—Plant much creeping. *Leaves* stalked, downy. *Flowers* large, blue, in threes, axillary. called also alehoof and tunhoof, employed for preserving beer before hops were used—

†† *Stamens included within the tube of the corolla.*

15. Marrúbium. *Linn.* White Horehound.

Cal. with 10 ribs and 5 or 10 spreading teeth, the throat hairy. *Cor.* with the tube exserted, upper *lip* straight, linear, cloven; lower one 3-lobed, middle lobe the largest, emarginate.—Name of doubtful origin; some say from a town so called in Italy.

H. 1. M. *vulgáre*, Linn. (*White Horehound*); stem erect, leaves roundish ovate toothed wrinkled, calyx with 10 setaceous hooked teeth. *Engl. Bot. t.* 410. *Hook. Scot. i. p.* 184. *Engl. Fl. v. iii. p.* 103.

Waste places and way-sides: frequent in England; less common in Scotland, where it is found near Edinburgh, and in Ireland. *Fl.* Aug. ♃.—One to a foot and a half high, bushy; every where hoary with a white, thick pubescence or woolliness. *Flowers* small, almost white, in crowded whorls. Smell aromatic; flavour bitter. The plant has been much in use for coughs and asthmas.

** *Calyx two-lipped.* Gen. 16—21.

16. Ácinos. *Moench.* Basil Thyme.

Whorls few-flowered. *Cal.* 13-nerved, tubular, gibbous at the base below; upper *lip* 3-, lower 2-fid, throat hairy. *Cor.* with the upper lip nearly plane; lower one trifid, middle lobe nearly entire.—Name, applied by the Greeks to some aromatic plant.

H. 1. A. *vulgáris*, Pers. (*common Basil Thyme*); flowerstalks simple about 6 in a whorl, stem ascending branched, leaves oblong on short stalks acute serrated more or less ciliated at the base.—*Thymus Acinos, Linn.*—*Engl. Bot. t.* 411. *Hook. Scot. i. p.* 185. *Engl. Fl. v. iii. p.* 109.

Stem 6—8 inches long. *Leaves* sometimes almost entire. *Flowers* bluish purple. Lower *lip* of the *corolla* with the middle segment emarginate. Smell fragrant, aromatic.

17. Calamíntha. *Moench.* Calamint.

Flowers axillary, somewhat solitary, or often in loose bracteated *cymes*. *Cal.* tubular, 13-nerved, nearly equal at the base; upper *lip* 3-toothed; lower *lip* bifid, the throat mostly hairy. *Cor.* with the upper *lip* nearly plane, emarginate; lower one trifid, middle lobe emarginate.—Name, καλος, *good*, and μενθα, *mint*: a plant whose scent drove away serpents.

1. C. *officinális*, Moench. (*common Calamint*); whorls on forked many-flowered stalks, leaves with shallow serratures, hairs in the mouth of the calyx not prominent. *Sm.*—*Melissa Calamintha*,

Linn.—Thymus Calamintha, Scop.—Engl. Bot. t. 1676. *Engl. Fl. v. iii. p.* 109.

Way-sides and borders of fields, chiefly in gravelly soils; not unfrequent in England. South of Ireland. *Fl.* July, Aug. ♃.—Plant aromatic, and employed to make Herb Tea.

H. 2. C. *Népeta*, Pursh. (*lesser Calamint*); whorls on forked many-flowered stalks longer than the adjoining leaf, leaves serrated, hairs in the mouth of the calyx prominent. *Sm.—Melissa Nepeta, Linn.—Thymus Nepeta, Engl. Bot. t.* 1414. *Engl. Fl. v. iii. p.* 110.

Dry banks and way-sides, on a chalky soil, in England, plentifully. (*Sm.*) *Fl.* Aug. ♃.—"Rather smaller in all its parts than the last; especially the leaves, which are more strongly serrated. Odour strong, resembling *Mentha Pulegium.* The prominent white hairs in the mouth of the calyx distinguish this from the preceding." *Sm.*—I fear this can hardly be considered really distinct from the preceding. My specimens of the two from the *Rev. Prof. Henslow*, gathered in Cambridgeshire, show that the serratures of the *leaves* and the hairs in the *calyx* are often the same in both.

18. Clinopódium. *Linn.* Wild Basil.

Whorls many-flowered, with numerous, linear *bracteas* forming a sort of *involucre. Cal.* tubular, 13-nerved, nearly equal at the base, often curved; upper *lip* 3-toothed; lower one bifid. *Cor.* with the upper *lip* nearly plane, emarginate; lower one 3-lobed, middle lobe emarginate.—Mr. Bentham thinks that this and the two preceding genera and *Gardoquia* of Ruiz and Pavon, should perhaps form but one genus, distinguished by the tubular, 13-nerved calyx and the peculiar conformation of the style, or stigma, which has its lower lobe recurved, flattened at the base, and surrounding the upper and shorter one.—Name, κλινη, *a bed*, and πȣς, ποδος, a *foot*, from the compact stalked head of flowers.

H. 1. C. *vulgáre*, Linn. (*Wild Basil*); leaves ovate obscurely serrated, whorls hairy, bracteas setaceous, pedicels branched. *Engl. Bot. t.* 1041. *Hook. Scot. i. p.* 184. *Engl. Fl. v. iii. p.* 105.

Hills and dry bushy places, not uncommon. *Fl.* Aug. ♃.—One to a foot and a half high, with soft hairs. *Flowers* in crowded *whorls*, large, purple. Smell aromatic.

19. Melittis. *Linn.* Bastard-Balm.

Cal. with branching veins, campanulate, ample; upper *lip* 2—3 toothed; lower two-lobed, lobes broadly ovate. *Cor.* with the tube much exserted; upper *lip* nearly flat, entire; lower one 3-lobed, lobes rounded, nearly equal.—Name, the same as μελισσα, a *Bee*, from μελι, *honey*, yielding honey to Bees.

H. 1. M. *Melissophýllum*, Linn. (*Bastard-Balm*); leaves oblongo-ovate or somewhat cordate, upper lip of the calyx with 2 or 3 teeth.

α. Leaves oblongo-ovate, middle lobe of the lower lip purple with a white margin. *M. Melissophyllum, Linn. Sp. Pl. p.* 832. *Curt. Fl. Lond. ed. i. t.* 39.—*M. grandiflora, Sm. Fl. Br. p.* 644. *Engl. Bot. t.* 636. (*excl. syn. of Curtis*). *Engl. Fl. v. iii. p.* 112. *Curt. Fl. Lond. ed. ii.*

β. Leaves broader subcordate, flowers reddish, the lower lip mostly spotted with purple. *M. Melissophyllum, Sm. Fl. Brit. p.* 643. *Engl. Bot. t.* 577.

Woods, coppices and hedges in the south (Hampshire) and particularly the south-west of England; exclusively. *Fl.* May, June. ♃.—A highly beautiful plant, a foot to a foot and a half high, with ample serrated *leaves*, and large, conspicuous, often highly coloured *flowers;* but in the colour of the flowers, in the relative breadth of the *leaves* and in the toothing of the *calyx*, very variable. Mr. Borrer informs me that "Linnæus' only specimen of *Melittis* in his Herbarium is a garden one, *precisely the plant of Curtis in Fl. Lond.*" Hence, that is the true *Melissophyllum.* A plant with still narrower and truly oblong leaves is not uncommon in gardens. The *grandiflora* figured in *Engl. Bot.* has the leaves broader than Curtis' plant, and the flower paler, evidently bordering upon the more common state of the species represented at *t.* 577 of *Engl. Bot.* as the true *M. Melissophyllum.* The observations of the Rev. J. S. Tozer in his letter to me of the 12th of Jan. 1829, I think sufficiently prove that no dependance can be placed upon the number of divisions of the calyx. "The *M. Melissophyllum* and *M. grandiflora* of *Sm.* I consider to be only one and the same species. I resided many years at Totness, in which neighbourhood the former is said to grow; and there I found a plant identical with that which still grows "a mile from Ashburton in the road towards Plymouth:"—the habitat given in *Engl. Bot.* for the latter species. It is a plant far from uncommon in the woods of Devon, and I have met with it also in the woods of Pembrokeshire. Now, in almost every individual I examined (and I have always examined them whenever I have found them,) the calyx is to be found in every state, 3-lobed, 4-lobed, and in every intermediate gradation."—The plant when growing is said to have a disagreeable smell, but when dried it is fragrant, like the *Anthoxanthum odoratum*, and the scent is retained for many years in the herbarium.

20. PRUNÉLLA. *Linn.* Self-heal.

Cal. ovate, upper *lip* plane, more or less distinctly 3-toothed, lower one bifid. *Cor.* with the upper lip nearly entire, arched; lower one 3-lobed. *Filaments* with two teeth at the extremity, one bearing the *anther.*—Name, from the German, *braüne*, the *quinsy*, whence *Brunella* of Ray, softened into *Prunella.*

1. P. *vulgáris*, Linn. (*Self-heal*); leaves stalked oblongo-ovate, upper lip of the calyx truncated, its teeth almost obsolete. *Engl. Bot. t.* 961. *Hook. Scot. i. p.* 188. *Engl. Fl. v. iii. p.* 114.

Moist and barren pastures, frequent. *Fl.* July, Aug. ♃.—*Flowers* very densely whorled, so as to form an imbricated oblong *spike*, with a pair of *leaves* at its base, and a pair of broad, obcordate *bracteas* beneath each *whorl. Cor.* violet blue, its lower *lip* finely toothed at the margin.

21. SCUTELLÁRIA. *Linn.* Skull-cap.

Cal. broadly ovate, having a conspicuous, concave tooth or scale on the upper side; its two nearly equal, entire *lips* closed after flowering. *Cor.* with the tube much exserted, upper *lip* straight, arched; lower one trifid.—Name, *scutella*, a little *dish* or *cup*, which the calyx somewhat resembles with its appendage or ear.

H. 1. S. *galericuláta*, Linn. (*common Skull-cap*); leaves lanceolate cordate at the base crenate, flowers axillary in pairs. *Engl. Bot. t.* 523. *Hook. Scot. i. p.* 185. *Engl. Fl. v. iii. p.* 113.

Banks of rivers and lakes, especially in stony places. *Fl.* July, Aug. ♃.—Eight or ten inches to a foot high. *Flowers* rather large, blue, downy.

H. 2. S. *mínor*, Linn. (*lesser Skull-cap*); leaves oblongo-ovate on very short stalks entire cordate at the base, flowers axillary in pairs. *Engl. Bot. t.* 524. *Hook. Scot. i. p.* 185. *Engl. Fl. v. iii. p.* 113.

Moist heathy places and by the sides of lakes, less frequent than the preceding. *Fl.* July, Aug. ♃.—Four to six inches high. Lower *leaves* sometimes with one or two teeth at the base, and hence, subhastate; upper ones much narrower and quite entire. *Flowers* pale reddish, almost white. Lower *lip* spotted.

ORD. II. ANGIOSPERMIA.* (*Seeds enclosed in a distinct capsule.*)

* *Cal. 4-fid.*

22. BÁRTSIA. *Linn.* Bartsia.

Cal. tubular, mostly coloured. *Cor.* ringent with a contracted orifice; upper lip arched, entire; lower one in 3, equal, reflexed lobes. *Anthers* mostly hairy. *Caps.* ovate, compressed, with 2 cells and many angular *seeds.*—*Nat. Ord.* SCROPHULARINEÆ. *Juss.* —Name in honour of *John Bartsch*, a Prussian Botanist, and friend of Linnæus, who died at Surinam.

1. B. *alpína*, Linn. (*alpine Bartsia*); leaves opposite cordato-ovate obtusely serrated, flowers in a terminal short leafy spike, anthers hairy. *Engl. Bot. t.* 361. *Hook. Scot. i. p.* 186. *Engl. Fl. v. iii. p.* 117.

Rocky alpine pastures; rare. Near Orton, Westmoreland. Middleton, Teesdale, on the Yorkshire and Durham side of the river. On Malghyrdhy and Ben Lawers in Breadalbane, Scotland. *Fl.* June, July. ♃.—*Stem* about a span high, simple. Upper *leaves* or *bracteas* often tinged with purple. *Flowers* large, deep purplish blue, downy; *lips* equal in length.

H. 2. B. *viscósa*, Linn. (*yellow viscid Bartsia*); leaves lanceolate inciso-serrate, upper ones alternate, flowers solitary axillary distant, lower lip large with two tubercles, anthers hairy. *Engl. Bot. t.* 1045. *Hook. Scot. i. p.* 186. *Engl. Fl. v. iii. p.* 118.

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* Αγγειον, a *vessel* or *capsule*, that which surrounds or encloses σπερμα, the *seed*.

Pastures, in many places in the west of England and Wales and south-west of Scotland and south of Ireland; *Mr. J. T. Mackay*. *Fl.* Aug. ⊙.—Habit of the last. *Flowers* yellow, handsome, according to Mr. Hopkirk, yielding an agreeable musky smell.

H. 3. B. *Odontítes*, Huds. (*red Bartsia*); leaves lanceolate serrated upper ones (or bracteas) alternate, flowers in unilateral racemes, anthers nearly glabrous, stem branched. *Engl. Bot. t.* 1415. *Hook. Scot. i. p.* 186. *Engl. Fl. v. iii. p.* 119.

Corn-fields and waste places, frequent. *Racemes* many, long, erect. *Flowers* reddish purple.

23. Euphrásia. *Linn.* Eye-bright.

Cal. tubular. Upper *lip* of the *Cor.* divided; lower one of 3 nearly equal lobes. Cells of the *Anthers* spurred at the base. *Caps.* ovato-oblong, 2-celled. *Seeds* striated.—*Nat. Ord.* Scrophularineæ. *Juss.*—Name from *Euphrosyne*, expressive of joy and pleasure, in allusion to its properties.

H. 1. E. *officinális*, Linn. (*common Eyebright*); leaves ovate deeply toothed, lobes of the lower lip emarginate. *Engl. Bot. t.* 1416. *Hook. Scot. i. p.* 186. *Engl. Fl. v. iii. p.* 122. +

Pastures in the plains and on the mountains, abundant. *Fl.* July. ⊙.—Varying from one inch, with often only a single flower, to 6 and 8 inches, in the Highland pastures, where it becomes very much branched. *Flowers* axillary, but crowded at the extremities of the branches, white or reddish, streaked with purple. The plant is still much used in rustic practice as a remedy for diseases of the eye. Milton makes the Archangel Michael employ it, to remove the film from the eyes of our first parents occasioned by eating the forbidden fruit:

> " then purged with *Euphrasy* and Rue
> The visual nerve, for he had much to see."

24. Rhinánthus. *Linn.* Yellow Rattle.

Cal. inflated. Upper *lip* of the *Cor.* compressed laterally, lower one plane, 3-lobed. *Caps.* of 2 cells, obtuse, compressed, with many imbricated, flat and margined *seeds.*—*Nat. Ord.* Scrophularineæ *Juss.*—Name; ῥιν, a *nose*, and ανθος, a *flower*: in allusion to the beaked upper lip of the corolla, which is very remarkable in the *R. Elephas.*

H. 1. R. *Crista-Galli*, Linn. (*common Yellow Rattle*); leaves lanceolate serrated, flowers in lax spikes, calyx glabrous, style included, seeds with a broad membranous border. *Engl. Bot. t.* 657. *Hook. Scot. i. p.* 178. *Engl. Fl. v. iii. p.* 120.—*R. Crista-Galli, minor*, *Svensk. Bot. t.* 348. *f.* 2. *Wahl. Suec. i. p.* 386.

Meadows and pastures, abundant. *Fl.* June. ⊙.—One to 2 feet high, glabrous, often much branched and more or less spotted with purple. *Leaves* veiny. *Flowers* axillary in the upper leaves or *bracteas*, and hence loosely spiked. When the fruit is ripe, the *seeds* rattle in the husky cap-

+ [illegible]

sule and indicate to the Swedish peasantry the season for gathering in their hay. In England, Mr. Curtis well observes the hay-making begins when this plant is in full flower. How far the following may be considered as really distinct, I cannot say, as I have not had the opportunity of studying the living plant.

2. R. *májor*, Ehrh. (*large bushy Yellow Rattle*); leaves linear-lanceolate upper ones especially acuminated, flowers in crowded spikes, calyx glabrous, style a little exserted, seeds with a narrow membranous border. *Engl. Fl. v. iii. p.* 121.—*R. grandiflorus, Bluff et Fing. Comp. Fl. Germ. v. ii. p.* 61.—*R. Crista-Galli,* β. *Linn.—var. major. Svensk. Bot. t.* 348. *f.* 1. *Wahl. Suec. i. p.* 386.

Corn-fields in the north of England, *Dr. Richardson,* and *Mr. James Backhouse,* who observes that where the soil approaches to peat, it almost obliterates the crops. *Fl.* July, 2 or 3 weeks later than the preceding species. (*Mr. Backhouse*) ⊙.—I have gathered *R. Crista-Galli,* quite equal to this, in size and ramification, in Scotland: but Mr. Backhouse adds justly that the present plant has denser and more bushy *spikes,* yellowish *bracteas,* each terminated by an elongated green point. The segments of the *corolla* of the upper lip are wedge-shaped, purple; the *germen* narrower and more tumid: the *style* prominent: the *nectary* heart-shaped, more spreading and greenish. The *seeds* thick at the edge and not quite destitute of a membranous margin. It is frequent upon the continent.—Lamarck, De Candolle, and Duby distinguish 2 species of *Rhinanthus* in France, simply by the downy or glabrous calyx.

25. Melampýrum. *Linn.* Cow-wheat.

Cal. tubular. Upper *lip* of the *cor.* laterally compressed, turned back at the margin; lower *lip* trifid. *Caps.* oblong 2-celled, oblique, opening on one side. *Cells* 1-seeded. *Seeds* gibbous at the base.—*Nat. Ord.* Melampyraceæ. *Richard.*—Name; μελας, *black,* and πυρος, *wheat.* Its seeds resemble grains of wheat, and they are said when mixed with flour to make the bread black.

1. M. *cristátum,* Linn. (*crested Cow-wheat*); spikes densely imbricated 4-sided, bracteas cordate acuminated finely ciliato-dentate. *Engl. Bot. t.* 41. *Engl. Fl. v. iii. p.* 123.

Woods, thickets and sometimes in corn-fields, chiefly in Norfolk, Cambridgeshire, Bedfordshire, and Huntingdonshire. *Fl.* July. ⊙.—A beautiful plant, as is the following. *Leaves* lanceolate, acuminate, entire. *Bracteas* rose-coloured at the base. *Flowers* yellow, purple within the upper lip.

H. 2. M. *arvénse,* Linn. (*purple Cow-wheat*); spikes oblong lax, bracteas lanceolate pinnatifid with setaceous segments, teeth of the calyx much longer than the tube, lips of the corolla closed. *Engl. Bot. t.* 53. *Engl. Fl. v. iii. p.* 124.

Corn-fields and dry gravelly banks, principally in Norfolk, and near Norwich. *Fl.* July. ⊙.—Spikes of *flowers* much larger than the preceding and exceedingly handsome from the bright varied colour, yellow, purple, rose-colour and green of the *flowers* and *bracteas.*

3. M. *praténse*, Linn. (*common yellow Cow-wheat*); flowers axillary secund, leaves in distant pairs, corolla 4 times as long as the calyx closed, the lower lip protruded, upper bracteas mostly pinnatifid or toothed at the base. *Engl. Bot. t.* 113. *Hook. Scot. i. p.* 187. *Engl. Fl. v. iii. p.* 125.

β. smaller, somewhat succulent, bracteas quite entire.

Groves and thickets (not in meadows as the name would imply), frequent. β. Mountains in the south of Ireland; *Sir T. Gage, Bart.* Muckish and Crough Patrick, Ireland. *Fl.* July, Aug. ☉.—One foot or more high, slender, with straggling, opposite branches. *Flower* large, pale yellow. The *var.* β. Sir Thomas Gage, as well as myself, gathered many years ago in Ireland, where it is not uncommon, and it is, I presume, the *M. montanum* of Dr. Johnstone's Flora of Berwick: if so, it is a native of the north of England also. I noticed this under my description of *M. sylvaticum* (in *Fl. Lond. N. S. t.* 176.) as a *var.* of *pratense.*

4. M. *sylváticum*, Linn. (*lesser-flowered yellow Cow-wheat*); flowers axillary secund, leaves in distant pairs, corolla less than twice as long as the calyx, the lips equal in length a little open. *Engl. Bot. t.* 804. *Hook. Scot. i. p.* 187. *Engl. Fl. v. iii. p.* 126.

Alpine woods, rare; in the north of England; more general, but very local, in Scotland. In several parts of Perthshire. Auchindraine woods on the Doune, Craigs of Ness, &c. Ayrshire; *Mr. James Wilson. Fl.* July. ☉.—One foot high. *Bracteas* always entire. *Cor.* deep yellow, very small, quite different from that of the preceding.

26. LATHRǼA. *Linn.* Tooth-wort.

Cal. campanulate. *Cor.* tubular, 2-lipped, the upper *lip* concave. A depressed *gland* at the base of the *germen. Capsule* 2-valved, one-celled, having two spongy *receptacles* in the middle of each valve.—Plants *leafless, coloured.*—*Nat. Ord.* OROBANCHEÆ. *Rich.*—Name; λαθραιος, *hid* or *concealed*, the plant being much concealed by the earth or dead leaves.

1. L. *squamária*, Linn. (*greater Tooth-wort*); stem simple, flowers pendulous in one-sided racemes, lower lip of the corolla 3-cleft. *Engl. Bot. t.* 50. *Hook. Scot. i. p.* 187. *Engl. Fl. v. iii. p.* 127.

β. bracteas lanceolate, style straight exserted above the upper nearly entire lip of the corolla. *G. E. Smith in Cat. of Pl. of S. Kent. p.* 34.

Woods and coppices apparently parasitic on the roots of Hazels, Elms and other trees, in various parts of England, Scotland and Ireland. β. Lyminge, Kent. *Rev. G. E. Smith. Fl.* Apr. May. ♃.—Branching at the very base. Whole plant succulent, with many, fleshy, tooth-like scales. *Bracteas* broadly ovate: in β. lanceolate. *Flowers* purplish. *Style* included or, as in all my specimens, and in var. β., exserted.

** *Calyx 5-cleft, (in Pedicularis irregular).*

27. PEDICULÁRIS. *Linn.* Louse-wort.

Cal. inflated, 5-cleft, or unequally 2—3 lobed, jagged, somewhat leafy. Upper *lip* of the *Cor.* laterally compressed, arched, lower one plane, 3-lobed. *Caps.* oblique, compressed, 2-celled. *Seeds* angular.—*Nat. Ord.* SCROPHULARINEÆ. *Juss.*—Name, from its supposed property of producing the lousy disease in sheep that feed upon it, but which rather arises from the wet pastures where such plants grow.

H. 1. P. *palústris*, Linn. (*Marsh Louse-wort or tall Red Rattle*); stem solitary branched upwards, calyx broadly ovate hairy ribbed with crenated nearly equal lobes. *Engl. Bot. t.* 399. *Hook. Scot. i. p.* 188. *Engl. Fl. v. iii. p.* 129.

Wet and marshy pastures. *Fl.* June, July. ♃?—Stem 1 foot high, often very purple, bearing many lateral branches. *Leaves* pinnate; *pinnæ* ovate, almost pinnatifid. *Flowers* large, handsome, deep rose coloured.

H. 2. P. *sylvática*, Linn. (*Pasture Louse-wort or Dwarf Red Rattle*); stem branched from the base and spreading, calyx oblong angular glabrous in 5 unequal crenate and almost leafy segments. *Engl. Bot. t.* 399. *Hook. Scot. i. p.* 188. *Engl. Fl. v. iii. p.* 129.

Moist pastures and heaths, common. *Fl.* July. ♃.—*Stems* 3—5 inches long. Lower *leaves* pinnatifid, the rest pinnated with deeply serrated *pinnæ*. *Flowers* large, handsome, pale rose-coloured; they are rarely found (near Dunrobin Castle, Scotland, by the Marquis of Stafford, and in the same place the succeeding year by Mr. Borrer and myself,) with a salver-shaped, 6-cleft, regular *corolla*, and 6 *stamens*, 4 long and 2 short.

28. ANTIRRHÍNUM. *Linn.* Snapdragon.

Cal. 5-partite. *Cor.* personate, gibbous at the base, (no distinct spur,) its mouth closed by a projecting palate. *Caps.* 2-celled, oblique, opening by three pores at the extremity.—*Nat. Ord.* SCROPHULARINEÆ. *Juss.*—Name, *αντι*, *resembling*, *ϱιν*, a *nose*, *muffler*, or *mask*, from the appearance of the flowers.

1. A. *május*, Linn. (*great Snapdragon*); leaves lanceolate alternate those of the branches opposite, flowers spiked, segments of the calyx ovate obtuse. *Engl. Bot. t.* 129. *Hook. Scot. i. p.* 189. *Engl. Fl. v. iii. p.* 135.

Old walls and chalk hills, frequently originating from neighbouring gardens. *Fl.* July, Aug. ♃.—One to two feet high. *Flowers* very large, mostly purplish red, but often varying to white.

H. 2. A. *Oróntium*, Linn. (*lesser Snapdragon*); leaves mostly alternate linear-lanceolate, spikes very few-flowered lax, segments of the calyx longer than the corolla. *Engl. Bot. t.* 1155. *Engl. Fl. v. iii. p.* 136.

Corn-fields in a dry soil in many parts, especially of the east and south, of England. *Fl.* July, Aug. ⊙.—*Flowers* purple, remarkable for the great length of the *calyx-segments*, particularly after flowering.

29. Linária. *Juss.* Toadflax.

Cal. 5-partite. *Cor.* personate, spurred at the base, the mouth closed by a projecting palate. *Capsule* ventricose, 2-celled, opening by valves or teeth.—*Nat. Ord.* Scrophularineæ. *Juss.*—Name, from *Linum, flax*, which the leaves of some species resemble.

H. 1. L. *Cymbalária*, Mill. (*Ivy-leaved Toadflax*); leaves cordate, 5-lobed alternate glabrous, stems trailing. *Antirrhinum Cymbalaria, Linn.—Engl. Bot. t.* 502. *Hook. Scot. i. p.* 188. *Engl. Fl. v. iii. p.* 131. +

On old walls, and in many places; the outcast of gardens. *Fl.* all the summer. ♃.—*Stems* very long, filiform. *Leaves* petioled, often purple beneath. *Flowers* small, pale blue or purplish.

H. 2. L. *spúria*, Mill. (*round-leaved Fluellen or Toadflax*); leaves ovate downy mostly alternate, stems procumbent. *Antirrhinum spurium, Linn.—Engl. Bot. t.* 691. *Engl. Fl. v. iii. p.* 131.

Sandy corn-fields, mostly confined to the east and south-east of England. Abundant in many parts of Norfolk and Suffolk. *Fl.* July—Sept. ⊙.—*Flowers* small, yellowish, upper lip purple. *Cal.* large.—Sir James E. Smith mentions some flowers as being regular, with 5 spurs.

H. 3. L. *Elátine*, Desf. (*sharp-pointed Fluellen or Toadflax*); leaves broadly hastate acute, lowermost ovate opposite, stems procumbent hairy. *Antirrhinum Elatine, Linn.—Engl. Bot. t.* 692. *Engl. Fl. v. iii. p.* 132.

Corn-fields in a dry, gravelly or chalky soil, in England. *Fl.* July—Sept. ⊙.—Similar to the last, yet distinct from it; smaller in all its parts. I am indebted to the Rev. Prof. Henslow for excellent specimens of both.

H. 4. L. *répens*, Ait. (*creeping pale-blue Toadflax*); leaves linear whorled or scattered, stem erect panicled, calyx glabrous the length of the spur, (corolla striated.) *Antirrhinum repens, Linn. Engl. Bot. t.* 1253. *Hook. Scot. i. p.* 188. *Engl. Fl. v. iii. p.* 133.

Chalky banks and rocky places near the sea, rare; principally in the south of England and Ireland. Near Culzean, Ayrshire, and near Musselburgh, Scotland. *Fl.* July—Sept ♃.—*Stems* erect, 1 to 1½ foot high, slender, branched. *Leaves* somewhat whorled below, but these soon dying away. *Flowers* in panicled racemes, bluish, palate yellow. Mr. Hopkirk has observed the flowers of this to assume the *Peloria* appearance. L. supina

H. 5. L. *vulgáris*, Moench. (*yellow Toadflax*); erect, leaves linear-lanceolate scattered crowded, spikes terminal flowers imbricated, calyx glabrous shorter than the spur. *Antirrhinum Linaria, Linn.—Engl. Bot. t.* 658. *Hook. Scot. i. p.* 188. *Engl. Fl. v. iii. p.* 134.

Borders of corn-fields, and in hedges, abundant. *Fl.* Aug. ♃.—One

+ L. cymbalaria supposed to have formed part of the poison called Acqua Toffana, which killed by slow degrees.

to two feet high, glaucous. *Flowers* large, yellow. A remarkable but
H. not very uncommon monstrosity of this is the "*Peloria*" var. (figured
in *E. Bot. t.* 260), with 5 spurs and 5, usually, imperfect *stamens.*

H. 6. L. *mínor*, Desf. (*least Toadflax*); leaves linear-lanceolate obtuse mostly alternate downy, stem erect much branched, calyx longer than the spur. *Engl. Bot. t.* 2014. *Hook. Scot. i. p.* 188. *Engl. Fl. v. iii. p.* 135.

Sandy fields, principally, I believe, in the eastern and south-eastern parts of England. Rare in Scotland and only in the vicinity of Glasgow, *Dr. Brown* and *Mr. Hopkirk.* In Ireland, at Sunday's well, *Dr. Woods. Fl.* June, July. ⊙.—Six—8 inches high, with small purplish-yellow flowers, which are stalked, solitary and axillary. *Seeds*, according to Smith, beautifully furrowed.

+ 30. SCROPHULÁRIA. *Linn.* Figwort.

Cal. 5-lobed, (or in *S. vernalis* deeply 5-cleft). *Cor.* subglobose; its limb contracted with 2 short *lips*, the upper with 2 lobes and frequently a small *scale* or abortive stamen within it, the lower 3-lobed. *Caps.* 2-celled, 2-valved, the margins of the valves turned inwards.—*Nat. Ord.* SCROPHULARINEÆ. *Juss.*—Named from *Scrophula*, a disease which this plant was supposed to cure.

* *Cal. with 5 rounded lobes, flowers purple.*

+ 1. S. *nodósa*, Linn. (*knotted Figwort*); leaves cordato-triangular acute doubly serrated glabrous, stem with 4 rather obtuse angles, root tuberous. *Engl. Bot. t.* 1544. *Hook. Scot. i. p.* 189. *Engl. Fl. v. iii. p.* 137.

Woods and moist ground, frequent. *Fl.* July. ♃.—*Root* large, thick and knotty. *Stem* 2—3 feet high. *Flowers* in dichotomous, axillary and terminal, bracteated *panicles.* *Cor.* greenish purple, with a scale in the upper lip.

2. S. *aquática*, Linn. (*Water Figwort, Water Betony*); glabrous, leaves elliptical-ovate mostly cordate at the base crenato-dentate, stem winged at the angles. *Engl. Bot. t.* 854. *Hook. Scot. i. p.* 189. *Engl. Fl. v. iii. p.* 138.

Sides of rivers and in wet places. *Fl.* July. ♃.—Three to four feet high. *Panicles* terminal, bracteated, with remote branches. *Flowers* dark purple at the mouth, (wholly of pale yellowish green in a *var.* found by the Rev. Mr. Tozer in Cornwall,) with a *scale* in the upper lip. *Cal.* margined with purple.

3. S. *Scorodónia*, Linn. (*Balm-leaved Figwort*); downy, leaves cordato-triangular with large double serratures, panicles leafy. *Engl. Bot. t.* 2209. *Engl. Fl. v. iii. p.* 138.

Moist places, only in the extreme south and south-west of England, as in Jersey, St. Ives', Cornwall, at Tresco in the Scilly isles, and at Tralee in Ireland. *Fl.* July. ♃.—Distinguished from all the preceding in being downy, in its *leaves* having large teeth or serratures which are again serrated, and by the leaves which accompany the pani-

+ useful in skin complaints - root edible, used at the siege of Rochelle 1628 & called by the French "Herbe du siège.

cle. *Flowers* dull purple, with a scale inside. The Rev. Mr. Bree has sent me a plant which he considers a hybrid between *S. Scorodonia* and *S. aquatica*, brought from St. Ives, and cultivated in his garden.

** *Calyx with 5 deep, acute segments; flowers yellow.*

H. 4. S. *vernális*, Linn. (*yellow Figwort*)*;* hairy, leaves broadly cordate doubly inciso-serrate acute, pedúncles axillary solitary forked leafy, scale of the upper lip wanting. *Engl. Bot. t.* 567. *Hook. Scot. i. p.* 189. *Engl. Fl. v. iii. p.* 139.

Road-sides and waste places, in many parts of England and Scotland; but no where general. In Norfolk, Suffolk, Berkshire, Essex, Wales, Gloddarth and Comray, (*Mr. W. Wilson.*)—Hoddam Castle; Bothwell Castle; near the hill of Moncrieff; walls near Hatton, Edinburgh; in Perthshire, as at Cluny; Balmano Castle; Meithlie, Aberdeenshire; near Forfar; between Holmston and the river Ayr, (*Mr. James Wilson.*) *Fl.* April, May. ♃.—Considerably different in many points from all the preceding, and as Sir James E. Smith has well observed, exhibiting a great affinity with the pretty Peruvian Genus *Calceolaria*. *Styles* and *stamens* (which latter arise from the base of the corolla) protruded from the very contracted mouth of the yellow *corolla.*

31. Digitális. *Linn.* Foxglove.

Cal. in 5 deep unequal segments. *Cor.* campanulate, inflated beneath, *limb* obliquely 4—5 lobed, unequal. *Caps.* ovate, of 2-*cells* and *many* seeds.—*Nat. Ord.* Scrophularineæ. *Juss.*—Name, *digitale*, the *finger of a glove*, which its flowers resemble. Hence *Fox-glove* in English, *doigts de la Vierge*, *gants de notre Dame*, &c. in French.

H. 1. D. *purpúrea*, Linn. (*purple Foxglove*)*;* segments of the calyx ovate acute, corolla obtuse its upper lip or lobe scarcely divided, leaves ovato-lanceolate crenate downy. *Engl. Bot. t.* 1297. *Hook. Scot. i. p.* 189. *Engl. Fl. v. iii. p.* 140.

Dry banks, pastures, walls, &c. in hilly and especially subalpine and rocky countries; hence almost unknown in the most eastern parts of England, such as Norfolk and Suffolk. *Fl.* June, July. ♂.—The most stately and beautiful of our herbaceous plants; and one that has had great reputation as a medicinal plant. Three to 4 feet high. *Leaves* large, veiny. *Spikes* very long, of numerous, drooping, purple (or rarely white) *flowers,* spotted within.

32. Limosélla. *Linn.* Mudwort.

Cal. 5-cleft, equal. *Cor.* shortly 5-cleft, campanulate, equal. *Stam.* nearly equal. *Stigma* capitate. *Caps.* globose, 2-valved. —*Nat. Ord.* Scrophularineæ. *Br.*—Name, from *limus, mud:* the plant growing in muddy places.

H. 1. L. *aquática*, Linn. (*common Mudwort*)*;* leaves lanceolate spathulate on long stalks, scapes shorter than the petioles. *Engl. Bot. t.* 357. *Hook. Scot. i. p.* 190. *Engl. Fl. v. iii. p.* 145.

Muddy places, and where water has stood; in several parts of England, Scotland and Ireland, but often overlooked on account of its small size. *Fl.* July, Aug. ⊙.—*Root* creeping, filiform, throwing up clusters of glabrous *leaves* one or two inches long, including the petiole. *Flowers* minute, arising from the base of the *leaf-stalks*, peduncled. *Cor.* pale rose-colour. *Anthers* purplish blue, one-celled. *Seeds* with a furrow on the back and numerous transverse striæ.

33. SIBTHÓRPIA. *Linn.* Sibthorpia.

Cal. in 5, deep, spreading segments. *Cor.* 5-cleft, rotate, the two lowermost segments the narrowest; *stigma* dilated. *Capsule* nearly orbicular, compressed, 2-celled, 2-valved.—*Nat. Ord.* SCROPHULARINEÆ. *Juss.*—Name, given in honour of *Dr. Humphrey Sibthorpe*, the successor of Dillenius in the botanical chair at Oxford.

H. 1. S. *europǽa*, Linn. (*creeping Sibthorpia*, or *Cornish Moneywort*). *Engl. Bot. t.* 649. *Engl. Fl. v. iii. p.* 143.

Moist shady places, in Devonshire, Cornwall, the Scilly Isles, and Conner hill, near Dingle, Ireland. *Fl.* July, Aug. ♃.—A graceful little plant, hairy, with creeping, filiform *stems* and alternate, orbiculari-reniform, broadly crenate *leaves*. *Flowers* axillary, solitary, on short stalks, pinkish white, very small.

34. VERBÉNA. *Linn.* Vervain.

Cal. tubular, with 5 teeth, one of them generally shorter than the rest. *Cor.* tubular, with the limb rather unequal, 5-cleft. *Stamens* included (sometimes only 2). *Seeds* 2 or 4, enclosed in a thin evanescent pericarp.—*Nat. Ord.* VERBENACEÆ. *Juss.*—Name; *ferfaen* in Celtic, derived from *fer*, to drive away, and *faen*, a *stone*, from having been supposed to cure the complaint so called. *Théis.*

H. 1. V. *officinális*, Linn. (*common Vervain*); stamens 4, stem erect somewhat hispid, leaves lanceolate inciso-serrate or trifid with the segments cut rough, spikes filiform somewhat panicled, flowers rather remote. *Engl. Bot. t.* 767. *Hook. Scot. i. p.* 190. *Engl. Fl. v. iii. p.* 71.

Road-sides and waste grounds, frequent in England. Not found in Ireland, and only at Inverkeithing, Scotland, according to *Dr. Parsons. Fl.* July. ♃.—The Genus *Verbena* is placed by Sir James E. Smith in the first Order of this class: but it does not naturally rank there, being considerably different in the structure of its *germen* and *fruit.*

35. LINNǼA. *Gronov.* Linnæa.

Cal. 5-cleft, superior. *Cor.* campanulate, 5-fid, equal. *Fruit* a dry, 3-celled *berry*, with one cell only bearing a perfect *seed. Involucre* of about 4 leaves at the base of the germen.—*Nat. Ord.* CAPRIFOLIACEÆ. *Juss.*—Name: It was this "little northern plant, long overlooked, depressed, abject, flowering early," which Linnæus himself selected as therefore most appropriate to transmit his name to posterity. *Sm.*

1. L. *boreális*, Gronov. (*two-flowered Linnæa*). *Linn. Sp. Pl. p.* 880. *Engl. Bot. t.* 1297. *Hook. Scot. i. p.* 190. *Hook. Fl. Lond. N. S. t.* 199. *Engl. Fl. v. iii. p.* 142. H

Woods in Scotland, especially of Fir, as well as, more rarely, in open rocky and mossy situations (probably where trees *have* been) in many parts of Perthshire, Inverness-shire and Aberdeenshire. In addition to the several stations already given in *Flora Scotica* for this most interesting plant, I may mention, near Brahan Castle, (Ross-shire,) *Mr. Urquhart.* Kingcusie, 7 m. from Aberdeen, *Mrs. Boswell.* Knock of Alves (along with the more rare *Pyrola uniflora*) near Elgin, *Mr. Wilson*, schoolmaster of Alves; covering from 12 to 20 square yards and flowering abundantly, 1828. *The Rev. G. Gordon* has communicated most beautiful specimens to me from that spot. Fionlarig Park, by Loch Tay.—*Mr. Drummond* pointed it out to me growing abundantly on the sloping and mossy sides of hills at a considerable elevation upon the Clova mountains, but *flowering* only among Alder and Birch at the foot of them, above the White Water river. Banks of the Esk, at Dalhousie, *Mr. Archibald.*—In England, only one station for it is known; viz. in a plantation of Scotch Firs at Cathcerside, in the parish of Hartburn, Northumberland, where *Miss Emma Trevelyan* of Wallington House in that county, was its fortunate discoverer. *Fl.* May, June. ♃.—*Stems* trailing, filiform, branched. *Leaves* opposite, broadly ovate, stalked, obscurely crenate. *Peduncles* axillary, long erect, 2-flowered. *Flowers* fragrant, graceful, drooping; *pedicels, bracteas, involucre*, globose *germen* and *calyx* clothed with glandular *hairs.* *Cor.* rose-coloured, yellowish within.

*** *Calyx lateral, in 2, generally combined, often bifid segments.*

36. Orobánche. *Linn.* Broom-rape.

* *Bracteas solitary under each flower.*

Cal. of 2 lateral, often combined and bifid segments, bracteated. *Cor.* ringent, 4—5-cleft. A *gland* at the base of the germen beneath. *Stigma* capitate. *Capsule* 2-valved, bearing numerous minute *seeds*, on parietal longitudinal *receptacles.*—*Leafless, brown or purplish, herbaceous, scaly* plants, *often attached to the roots of other plants.*—*Nat. Ord.* Orobancheæ. *Vent.*—Name, from οροβος, a *leguminose* or *pea-like plant*, and αγχειν, to *strangle;* the roots being often attached to plants of that description are supposed to injure them.

H 1. O. *májor*, Linn. (*greater Broom-rape*); stem simple, corolla tubular its upper lip undivided, lower one in 3 nearly equal segments, the lateral ones acute the terminal one larger obtuse, stamens glabrous, style downy. *Engl. Bot. t.* 421. *Hook. Scot. i. p.* 190. *Engl. Fl. v. iii. p.* 146.

On the roots of Broom and Furze and other leguminose plants, not unfrequent. *Fl.* June, July. ♃.—One to one foot and a half high, leafless. Whole plant dingy purplish-brown, pubescent. *Stem* swelling at the base and very scaly; scales more distant upwards and becoming bracteas among the flowers; one at the base of each. *Flowers* in a long spike. *Calyx* of 2, lateral, lanceolate *leaves*. *Cor.* large.

H. 2. O. *caryophyllácea*, Sm. (*Clove-scented Broom-rape*); stem simple, tube of the corolla inflated especially above, limb spreading 2-lipped, upper lip broad emarginate, lower with 3 lobes, all the segments obtuse wavy, stamens hairy especially at the base within, style pubescent, stigma dark purple.—*Sm. in Linn. Tr. v. iv. p.* 169. *G. E. Smith, Pl. of Kent, p.* 34. *t.* 3. *f.* 4.—*O. Galii, Bot. Gall. p.* 349.

On the roots of *Galium Mollugo*, *Rubus fruticosus*, &c. in South Kent; *Mr. G. E. Smith*. *Fl.* — ♃.—Mr. Borrer is of opinion that this plant is not exactly the same with the *caryophyllacea* of Smith, which, indeed may very likely be the case; but as I have not had an opportunity of examining recent specimens, nor of comparing our plant with authentic ones of Sir James E. Smith, I do not feel competent to decide. I have drawn up the above character from original specimens gathered in South Kent, and communicated by my very zealous botanical friend *Mr. Winterbottom*.

3. O. *elátior*, Sutton, (*tall Broom-rape*); stem simple, corolla funnel-shaped, lower lip with acute nearly equal segments, stamens downy, style glabrous. *Sm.*—*Sutton in Linn. Tr. v. iv. p.* 178. *t.* 17. *Engl. Bot. t.* 568. *Engl. Fl. v. iii. p.* 147.

Clover-fields and bushy places in a light gravelly soil, in several parts of England. *Fl.* July, Aug. ♃.—Taller and yellower than the 2 preceding. *Flowers* with their upper lip lobed. *Stamens* inserted higher up in the tube.

H. 4. O. *mínor*, Sm. (*lesser Broom rape*); stem simple, corolla nearly cylindrical, lower lip with curled segments the middle one largest and lobed, stamens fringed, style glabrous. *Sm. Fl. Brit. p.* 670. *Engl. Bot. t.* 422. *Engl. Fl. v. iii. p.* 148.

Clover-fields, abundant in Norfolk, Kent, and Brecknockshire. Upon Ivy, in many parts of Ireland, *Mr. J. T. Mackay*. *Fl.* July, Aug. ⊙.? Much smaller than any of the preceding and more slender. *Cor.* not at all tumid, upper lip unequally notched. H. [illegible]

5. O. *rúbra*, Sm. (*red Broom-rape*); stem simple, corolla tubular its upper lip 2-lobed, lower one in 3 equal obtuse lobes, stamens partially glanduloso-pilose, style glabrous.—*Sm. Engl. Bot. t.* 1786. (*bad*). *Hook. in Fl. Lond. N. S. t.* 105. *Engl. Fl. v. iii. p.* 148.

Frequent upon basalt and trap rocks, in the Hebrides and adjacent shores of the mainland. Near Kirkaldy. Cave hill near Belfast, Ireland. *Fl.* July. ♃.

** *Bracteas 3 under each flower.*

6. O. *cærúlea*, Vill. (*purple Broom-rape*); stem simple, bracteas 3, upper lip of the corolla cloven and notched, lower in 3 equal entire segments, style downy. *Engl. Bot. t.* 423. *Engl. Fl. v. iii. p.* 149.

Grassy pastures near the sea: rare. Principally found in Norfolk. *Fl.* July. ♃.—More inclining to purplish blue than any of the preceding.

7. O. *ramósa*, Linn. (*branched Broom-rape*); stem branched, bracteas 3, upper lip of the corolla deeply cloven, lower equally 3-lobed, segments all rounded and entire. *Sm.—Engl. Bot. t.* 184. *Engl. Fl. v. iii.*

On roots of Hemp, principally in Norfolk and Suffolk. *Fl.* Aug. Sept. ⊙.

CLASS XV. TETRADYNAMIA.* 6 *Stamens*, 4 *long and* 2 *short.*—(*Nat. Ord.* CRUCIFERÆ. *Juss.*)

ORD. I. SILICULOSA, *a short pod or pouch.* Gen. 1—1~~4~~. 6

1. CAKÍLE. *Gærtn.* Sea Rocket.

Pouch angular, of 2, 1-seeded, indehiscent joints, the upper joint deciduous, bearing an upright, sessile *seed*, the lower one (sometimes abortive) pendulous. *Cotyledons* accumbent, (o =).—Name: an old Arabic word, applied probably to this or some allied genus.

1. C. *marítima*, Willd. (*purple Sea Rocket*); joints of the pouch two-edged, the upper one with two teeth at the base, leaves fleshy pinnatifid somewhat toothed. *Hook. Scot. i. p.* 193. *Engl. Fl. v. iii. p.* 183.—*Bunias Cakile, Linn.—Engl. Bot. t.* 231.

Sandy sea-shores, frequent. *Fl.* June, July. ⊙.—Bushy. *Branches* crooked, and, as well as the whole plant, succulent. *Flowers* purplish. *Pouch* thick, fleshy, at length somewhat woody. Mr. James Wilson finds it on the coast of Ayr, with white flowers.

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* From τετρα, 4, and δυναμις a power or superiority in length, of 4 over the other 2 stamens. This class is a most natural one, entirely corresponding with the *Cruciferæ* of Juss. The *Calyx* is of 4 pieces; the *corolla* of 4 petals, placed in a cross-shaped manner. *Pistil* single. *Fruit* either a *short pod* or *Pouch*, *Silicula*; or a *long pod*, *Siliqua*; from which rather arbitrary distinction the characters of the two orders are taken. In every extensive natural groupe the difficulty is great in defining the generic characters. So it is here, and they are mainly depending upon the *fruit*. Even the *Embryo* is taken into account. It is curved; the radical is turned upwards, and is either *dorsal*, originating from the back of, and applied to, one of the cotyledons, (o ||), hence *Cotyledons incumbent*; or *lateral* and applied to the two edges of the cotyledons (o=), whence *Cotyledons accumbent*. The *seed* being without albumen and readily removed from the skin or integument, facilitates the examination of the *Embryo*.—Mr. Brown's arrangement and character of the Genera I have adopted, with very few alterations, from the *Hort. Kew. ed.* 2.

2. CRÁMBE. *Linn.* Kale.

Pouch with the upper joint globose, indehiscent, deciduous, bearing one *seed* inverted, upon a stalk arising from the bottom of the cell; lower joint abortive, resembling a pedicel. *Cotyledons* conduplicate (o>>) *Wilson.*—Name; κραμβος, of the Greeks.

1. C. *marítima*, Linn. (*Sea Kale*); longer filaments forked, pouch pointless, leaves roundish sinuated waved toothed glaucous and as well as the stem glabrous. *Engl. Bot. t.* 1660. *Hook. Scot. i. p.* 193. *Engl. Fl. v. iii. p.* 184.

Sea-coast in sandy or stony soils, in various places; but not very general. *Fl.* June. ♃.—Root thick, fleshy. *Flowers* white. Well known as an excellent culinary vegetable when cultivated and blanched.

3. CORÓNOPUS. *Gærtn.* Wart-cress.

Pouch two-lobed, without *valves* or wings. *Seeds* solitary in each cell. *Cotyledons* linear, incumbent, (o||).—Name; κορωνη, a *Crow*, and πȣς, a *foot*; the cut leaves somewhat resembling a bird's foot.

H. 1. C. *Ruéllii*, Sm. (*common Wart-cress, Swine's Cress*); pouch undivided crested with little sharp points, style prominent. *Engl. Bot. t.* 1660. *Hook. Scot. i. p.* 193.—*Senebiera Coronopus, De Cand.*—*Engl. Fl. v. iii. p.* 179.—*Cochlearia Coronopus, Linn.*

Waste ground, not unfrequent in England. Rare in Scotland and mostly found about Edinburgh.—*Fl.* June—Sept. ⊙.—A much branched, spreading weed. *Leaves* bipinnate, their segments linear. *Flowers* very small, white, in lateral, axillary *corymbs*. *Pouch* large in proportion to the flower, curiously crested.

H. 2. C. *dídyma*, Sm. (*lesser Wart-cress*); pouch emarginate of two wrinkled lobes, style very short. *Sm. Fl. Brit. p.* 691.—*Senebiera didyma, Engl. Fl. v. iii. p.* 180.—*S. pinnatifida, De Cand.*—*Lepidium didymum, Linn.*—*Engl. Bot. t.* 248.

Waste ground near the sea, in the south and south-west of England only. About Exeter, Truro, and Penryn. Milfordhaven. Shore near Caernarvon, *Mr. W. Wilson.* South of Ireland, *Mr. Hicks. Fl.* July. ⊙.

4. ISÁTIS. *Linn.* Woad.

Pouch 1-celled, 1-seeded, laterally compressed; *valves* keeled, eventually separating. *Cotyledons* incumbent (o||).—Named from ισαζω, to *make even*, because it was supposed to have the property of reducing the inequalities of the skin.

1. I. *tinctória*, Linn. (*Dyer's Woad*); pouch obovato-oblong glabrous, radical leaves oblong crenate, those of the stem sagittate. *Engl. Bot. t.* 97. *Engl. Fl. v. iii. p.* 182.

Cultivated fields, scarcely indigenous. About Ely, Durham, &c. *Fl.* July. ♂.—*Flowers* yellow. Cultivated for the sake of the blue dye which it yields, and used by the ancient Britons to paint their bodies.

5. Vélla. *Linn.* Cress-rocket.

Pouch swollen, with a dilated, flat, winged *style*, twice as long as the *valves*. *Cotyledons* conduplicate (o>>). *Cal.* erect.—Named from *veler*, in Celtic, the *Cress*.

1. V. *ánnua*, Linn. (*annual Cress-rocket*); leaves bipinnatifid, fruit pendulous.—*Engl. Bot. t.* 1442. *Engl. Fl. v. iii. p.* 156.

Sandy fields, scarcely wild. Salisbury Plains; *Ray. Fl.* June. ⊙.

6. Thláspi. *Linn.* Penny-cress.

Pouch laterally compressed, emarginate; *valves* winged at the back, many-seeded. *Cotyledons* accumbent (o=). Name; from *θλαω, to flatten*, on account, probably, of its compressed *seeds* or *seed-vessels*.

H. 1. T. *arvénse*, Linn. (*Mithridate Mustard or Penny-cress*); pouch orbicular with a broad longitudinal wing, seeds concentrically striated, leaves oblong arrow-shaped toothed glabrous. *Br.—Engl. Bot. t.* 1659. *Hook. Scot. i. p.* 193. *Engl. Fl. v. iii. p.* 171.

Fields and by road-sides, in various places; but not common. *Fl.* June, July. ⊙.—One foot high, branched above. *Flowers* extremely small, white. *Pouch* very large, with unusually broad wings.

H. 2. T. *perfóliatum*, Linn. (*perfoliate Penny-cress*); pouch obcordate, style included within the notch, cauline leaves cordate somewhat toothed glabrous. *Br.—Engl. Bot. t.* 2354. *Engl. Fl. v. iii. p.* 172.

Limestone pastures, very rare; only found in the stone-pits about Burford, Oxfordshire; *Bobart* and *Sibth. Fl.* Apr. May. ⊙.

3. T. *alpéstre*, Linn. (*alpine Penny-cress*); pouch obovate retuse, cells 4—6-seeded, style exserted, stamens as long as the petals, cauline leaves cordato-sagittate, stem simple. *Br.—Engl. Bot. t.* 81. *Engl. Fl. v. iii. p.* 172.

Limestone pastures in the north of England: Derbyshire and Yorkshire. *Fl.* June, July. ♃.

7. Capsélla. *DC.* Shepherd's Purse.

Pouch laterally compressed, obcordato-cuneate; the *valves* sharply keeled, without wings, many-seeded. *Cotyledons* incumbent, (o||).—Name, the diminutive of *Capsula; a little capsule* or *box.*

H. 1. C. *Búrsa-Pastóris*, De Cand. (*common Shepherd's Purse*). *De Cand. Syst. Veg. v. ii. p.* 283.—*Thlaspi Bursa-Pastoris, Linn. Engl. Bot. t.* 1435. *Hook. Scot. i. p.* 193. *Engl. Fl. v. iii. p.* 173.

Corn-fields and waste places, everywhere, most abundant. *Fl.* the whole summer. ⊙.—Very variable, from 3 inches to 1—2 feet high. Radical *leaves* more or less pinnatifid, cauline ones lanceolato-sagittate, all generally toothed and rough with hairs. *Flowers* small.—It differs in the embryo as well as in the pouch from *Thlaspi*. This, however, according to Sir J. E. Smith, is the true *Thlaspi* of Dioscorides.

8. HUTCHÍNSIA. *Br.* (not of *Agardh.*) Hutchinsia.

Pouch elliptical, entire, the valves keeled, without wings; *cells* 2-seeded. *Filaments* simple. *Cotyledons* accumbent, (o=). *Br.* —Name given in honour of the late *Miss Hutchins*, of Bantry, Ireland, who explored most successfully the Botany of her native country, and added many new species to the Cryptogamia.

1. H. *petræa*, Br. (*Rock Hutchinsia*); leaves pinnate entire, petals scarcely longer than the calyx, pouch obtuse at both extremities, stigma sessile. *Br. in Hort. Kew. ed.* 2. *v. iv. p.* 82. *Hook. in Fl. Lond. N. S. t.* 31. *Engl. Fl. v. iii. p.* 168.

Limestone rocks, in several places in the west of England: as far north as Yorkshire. *Fl.* March, Apr. ⊙.—A small plant, from 2—4 inches high.

9. TEESDÁLIA. *Br.* Teesdalia.

Pouch emarginate; the *valves* keeled, the *cells* 2-seeded. *Filaments* having a little scale within at the base. *Cotyledons* accumbent, (o=). *Br.*—Named in honour of *Mr. Robert Teesdale*, a Yorkshire Botanist.

H. 1. T. *nudicaúlis*, Br. (*naked-stalked Teesdalia*). *Br. in Hort. Kew. ed.* 2. *v. iv. p.* 83. *Hook. Scot. i. p.* 194.—*Engl. Fl. v. iii. p.* 170.—*Iberis nudicaulis*, *Engl. Bot. t.* 327.

Sandy and gravelly banks, in many places. *Fl.* May, June. ⊙.—*Leaves* almost entirely radical, lyrato-pinnatifid. *Stems* 2—4 inches high, with sometimes 1—2, small, entire or cut *leaves*. *Flowers* white, two of the *petals* longer than the other two.

10. IBÉRIS. *Linn.* Candy-tuft.

Pouch emarginate, *valves* keeled and winged, *cells* 1-seeded. *Petals* unequal. *Cotyledons* accumbent, (o=.) *Br.*—Named from *Iberia*, or *Spain*; where many of the species grow.

1. I. *amára*, Linn. (*bitter Candy-tuft*); herbaceous, leaves lanceolate acute somewhat toothed glabrous, flowers racemose. *Br.* —*Engl. Bot. t.* 52. *Engl. Fl. v. iii. p.* 181.

Chalky fields, rare; in Oxfordshire, not unfrequent, and in Berkshire. *Fl.* July. ⊙.—*Stems* spreading, often a foot high. *Leaves* very variable in their toothing. Whole plant, as its name implies, very bitter.

11. LEPÍDIUM. *Linn.* Pepper-wort.

Pouch with the *cells* one-seeded, the *valves* keeled. *Petals* equal. (*Cotyledons* incumbent (o||); rarely accumbent, (o=). *Br.*— Name; λεπις, a *scale*, from the form of the little pouches.

H. 1. L. *latifólium*, Linn. (*broad-leaved Pepper-wort*); leaves ovato-lanceolate undivided serrated or entire, pouch oval entire. *Br.*— *Engl. Bot. t.* 182. *Hook. Scot. i. p.* 194. *Engl. Fl. v. iii. p.* 165.

Wet shady places, near the sea and salt marshes, in Norfolk, Essex, Yorkshire; and Weems in Fifeshire, Scotland. *Fl.* July. ♃.—Two to 3 feet high, branched, erect, with large *leaves*. *Flowers* numerous, small, in many terminal and axillary, clustered *racemes*.

2. L. *Drába*, Br. (*Whitlow Pepper-wort*); leaves amplexicaul broadly oblong or lanceolate entire or toothed, pouch cordate entire at the apex crowned with a style about its own length. *Br. in Hort. Kew. ed.* 2. *v. iv. p.* 86.

Fields and hedges, rare: Swansea, *Mr. James Turner*. At St. Peters and Ramsgate, Isle of Thanet, *Rev. M. J. Berkeley*. *Fl.* June. ♃.—8—10 inches to a foot high, branched, with large, distant *leaves* and almost umbellate *corymbs* of numerous small *flowers*. *Pedicels* very long.—I cannot hesitate about admitting this as a native. I received specimens many years ago, gathered as wild, by the late Mr. James Turner at Swansea; and this year (1829) the Rev. M. J. Berkeley found it at the two places above-mentioned; "in the one it was spread over the greater part of a clover field; in the other it was growing on the side of a road and abundantly in some waste ground on the other side of the hedge."

3. L. *ruderále*, Linn. (*narrow-leaved Pepper-wort*); flowers diandrous without petals, radical leaves pinnatifid, those of the branches linear entire, pouch emarginate patent. *Br.—Engl. Bot. t.* 1595. *Hook. Scot. i. p.* 194. *Engl. Fl. v. iii. p.* 165.

Waste places near the sea, and among rubbish. *Fl.* June. ⊙.—*Stem* sometimes a foot high, much branched. *Seed-vessels* numerous. *Cotyledons* incumbent, as in most of the genus; whereas those of its very near affinity, *L. virginicum*, are accumbent.

H, 4. L. *campéstre*, Br. (*common Mithridate Pepperwort*); pouch ovate emarginate winged rough with minute scales, style scarcely longer than the notch, cauline leaves sagittate toothed.—*Br. in Hort. Kew. ed.* 2. *v. iv. p.* 88. *Hook. Scot. i. p.* 195. *Engl. Fl. v. iii. p.* 166.—*Thlaspi campestre, Linn.—Engl. Bot. t.* 1385.

Corn-fields and dry gravelly soils, not uncommon; in England and Scotland. *Fl.* July. ⊙.—Ten to twelve inches high. *Stems* solitary, branched above. Lower *leaves* almost spathulate, all slightly pubescent, as well as the *racemes* and *pedicels*. *Pouch* curiously scaly.

H. 5. L. *Smíthii*, (*smooth Field Pepperwort*); pouch ovate emarginate winged glabrous, quite smooth or occasionally very minutely scaly on the back, style much exserted beyond the notch, cauline leaves sagittate toothed.—*Lepidium hirtum*, *Hook. Scot. i. p.* 195. *Engl. Fl. v. iii. p.* 167. (not *De Cand.*)—*Thlaspi hirtum*, *Fl. Brit. p.* 684. (not *Linn.*) *Engl. Bot. t.* 1803.

Borders of fields and hedges in Norfolk and Suffolk; very common in Anglesea, *Mr. W. Wilson*. Frequent in Scotland; at Warren Point, near Belfast, and about Dublin, plentiful, *Mr. J. T. Mackay*. *Fl.* June, July. ♃ ?—6—8 inches high. *Stems* many, from the same perennial, or perhaps biennial, root. Much resembling the last, but truly distinct from it, with a whiter and more abundant pubescence. *Stem* and *racemes* hairy. *Pod* with a much longer *style*, quite glabrous, and smooth or even; except that, rarely, in the middle of the back, there are a few very minute scales. The true *L. hirtum** of the south of France, is also very different from this, being smaller, more hairy and even shaggy all over, especially its *seed-vessels*, which are less truly ovate and considerably larger. Our plant seems not to be known on the continent, and with us is probably often confounded with the preceding.

12. Cochleária. *Linn.* Scurvy-grass.

Pouch oval or globose, many-seeded, the *valves* turgid. *Filaments* simple. *Seeds* not margined. *Cal.* patent. *Cotyledons* accumbent, (o=). *Br.*—Name; *Cochlear*, a *spoon*, from the shape of the leaves.

H. 1. C. *officinális*, Linn. (*common Scurvy-grass*); pouch globose, radical leaves petiolate cordato-reniform entire or sinuated, cauline ones sessile oblong sinuated. *Engl. Bot. t.* 351. *Hook. Scot. i. p.* 195. *Engl. Fl. v. iii. p.* 174.

Rocks and muddy places by the sea-coast; as well as upon the elevated mountains. *Fl.* May, June. ⊙.—*Leaves* succulent, more or less entire, those of the stem semi-amplexicaul by their, generally, toothed bases.

2. C. *grœnlándica*, Linn. (*Greenland Scurvy-grass*); pouch globose, leaves kidney-shaped (or cordate) fleshy entire, uppermost oblong. *Engl. Bot. t.* 2403. *Engl. Fl. v. iii. p.* 175.—*C. officinalis, var. Hook. Scot. i. p.* 195.

Sea-shores and Highland mountains. *Fl.* June, July. ⊙.—This has the *leaves* of the following, and the *pouch* of the preceding, species; from which latter I fear it is not distinct. It is frequent on the Highland mountains, and is there more dwarfish.

H. 3. C. *ánglica*, Linn. (*English Scurvy-grass*); pouch elliptical veiny, radical leaves petiolate cordate entire, cauline ones mostly sessile oblong more or less toothed near the base. *Engl. Bot. t.* 552. *Hook. Scot. i. p.* 195. *Engl. Fl. v. iii. p.* 176.

Muddy and rocky sea-shores and margins of salt rivers; frequent. *Fl.* May, June. ⊙.—Generally smaller than *C. officinalis*, with more entire *leaves* and elliptical *pouches*.

H. 4. C. *dánica*, Linn. (*Danish Scurvy-grass*); pouch ovato-elliptical veiny, leaves all petiolate nearly deltoid. *Engl. Bot. t.* 697. *Hook. Scot. i. p.* 196. *Engl. Fl. v. iii. p.* 177.

Sea-coast in a stony and muddy soil, frequent. *Fl.* May. ⊙.—The smallest of the species, with very angular and stalked *leaves*.

H. 5. C. *Armorácia*, Linn. (*Horse-radish*); pouch oblong, stigma dilated nearly sessile, radical leaves oblong on long footstalks crenate, cauline ones elongato-lanceolate serrate or entire. *Engl. Bot. t.* 2323. *Hook. Scot. i. p.* 196. *Engl. Fl. v. iii. p.* 177.

Said to be truly wild in the mountainous parts of the north of England; and mentioned as a native of Scotland, by *Sibbald;* but more frequently the outcast of gardens. *Fl.* May. ♃.—*Roots* long, running deep into the ground: well known at our tables, and esteemed for its pungent flavour. *Leaves* much veined. *Fruit* compressed, seldom perfected.

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* Rudely but faithfully figured in *Bauhin Pin. v. ii. p.* 922.

13. Subulária. *Linn.* Awl-wort.

Pouch oval, pointless, many-seeded, *valves* turgid. *Cotyledons* incumbent (o ||), linear, curved.—Name; *subula*, an *awl*, the leaves being subulate or awl-shaped.

1. S. *aquática*, Linn. (*Awl-wort*). *Engl. Bot. t.* 732. *Hook. Scot. i. p.* 196. *Hook. in Fl. Lond. N. S. t.* 135. *Engl. Fl. v. iii. p.* 157.

Shallow margins of alpine lakes, frequent. *Fl.* July. ♃.—*Roots* of numerous, long, white fibres. *Leaves* few, radical, awl-shaped, 1—3 inches long. *Scape* 2—4 inches high. *Flowers* small, which I have seen in perfection when entirely submerged. *Pouch* nearly approaching that of *Draba*, but with more turgid or convex *valves*. *Embryo* with its *cotyledons* linear, long, and the curvature takes place above the base of the cotyledons, not at the very base as in most other Cruciferæ. Most authors have followed Mr. Brown in calling the Cotyledons *bicrures*: but if by that is meant (as De Candolle's figure o || || would imply) that they are twice folded, I have never found them so in any of the numerous seeds I have examined: but constantly as represented in *Fl. Lond.* If indeed, as my friend Mr. Arnott observes, a transverse section be made above the radicle, the cotyledons will be cut through twice (|| ||), and such an appearance may have given rise to the idea of their being folded twice. The real structure can be easily seen through the skin of the seed and without dissection.

14. Drába. *Linn.* Whitlow-grass.

Pouch entire, oval, (or oblong) *valves* plane or slightly convex, *cells* many-seeded. *Seeds* not margined; *cotyledons* accumbent. (o=). *Filaments* simple. (*Draba and Erophila. DC*).—Name from δϱαβη, *acrid*, as are the leaves of many of this tribe.

H. 1. D. *vérna*, Linn. (*common Whitlow-grass*); scapes naked, petals deeply cloven, leaves lanceolate somewhat toothed hairy.

α. pouch flat. *D. verna, Linn.*—*Engl. Bot. t.* 586. *Hook. Scot. i. p.* 196. *Engl. Fl. v. iii. p.* 158.—*Erophila vulgaris, DC.*

β. pouch swollen.

Frequent on walls, rocks and dry banks. β. abundant on shelving rocks on Ben Lawers, above the Lake. *Fl.* March—May. ⊙.—The *var.* β. is a very singular one, which I have watched for many successive years in the above station, and never found it to vary, but always to have the pouch as much inflated as in that of *Subularia*. Nor is it altered by cultivation from seed in a garden.

2. D. *aizoídes*, Linn. (*yellow alpine Whitlow-grass*); scapes leafless glabrous, petals slightly notched twice the length of the calyx, pouch with a long style, leaves lanceolate rigid glossy keeled and ciliated. *Engl. Bot. t.* 1271. *Engl. Fl. v. iii. p.* 158.

Walls and rocks in South Wales, near Swansea. *Fl.* March, April. ♃.—Remarkable for its bright yellow *flowers*, and glossy *leaves* margined with hairs.

3. D. *rupéstris*, Br. (*Rock Whitlow-grass*); scape leafless or rarely with one leaf, petals undivided, pouch oblongo-oval tipped with a very short style, leaves plane lanceolate hairy. *Br. in Hort. Kew. ed.* 2. *v. iv. p.* 91. *Hook. Scot. i. p.* 196.—*D. hirta, Engl. Bot. t.* 1338. *Engl. Fl. v. iii. p.* 159. (not *Linn.* according to Mr. Brown). *Var. β. Hook. Scot. i. p.* 197.

Mountain summits: rare. Upon Ben Lawers and Cairngorum, Scotland.—*Fl.* July. ♃.—The slender, perennial *root* penetrates deep among mosses and the crevices of rocks, bearing above many short *branches*, each crowned with a tuft of lanceolate, soft, plane, entire, or rarely obscurely toothed, hairy *leaves*, their margins ciliated; the hairs mostly simple, sometimes branched, on the surface not unfrequently stellated: *scapes* several from the same root, an inch to 1½ inch high, slender, simple, stellato-pubescent. *Pedicels* short, pubescent, or rarely glabrous. *Cal.* mostly downy. *Pouch* oval-oblong, pubescent or glabrous.

H. 4. D. *incána*, Linn. (*twisted-podded Whitlow-grass*); cauline leaves several lanceolate toothed hoary with starry pubescence, pouch oblong somewhat twisted. *Engl. Bot. t.* 388. (from a cultivated specimen) *Hook. Scot. i. p.* 197. *Engl. Fl. v. iii. p.* 160.

Mountain rocks, in much less elevated situations than the last and much more frequent; in Wales, the north of England and Scotland. *Fl.* June, July. ♂.—From 4—6 inches to a foot and more high, sometimes throwing out lateral branches. Lower *leaves* frequently entire, upper ones deeply toothed, almost cut, acute. *Pouch* erect, glabrous in our British specimens. Small starved varieties, with only one or two leaves upon the stem, come very near to *D. rupestris:* yet the two are truly distinct.

5. D. *murális*, Linn. (*Speedwell-leaved Whitlow-grass*); stem branched, leaves ovate obtuse amplexicaul toothed, pouch patent glabrous. *Br.*—*Engl. Bot. t.* 912. *Hook. Scot. i. p.* 197. *Engl. Fl. v. iii. p.* 161.

Limestone mountainous countries, on rocks and walls. Craven, Yorkshire. Wardon hills, Bedfordshire. Emborough, Somersetshire.—Blarney Castle. Ireland, *Mr. Drummond.*—About Forfar, Edinb. and Chelsea, where it has probably escaped from gardens. *Fl.* May. ⊙.—Six inches to one foot high. *Leaves* scabrous. *Pouch* elliptical.

15. CAMELÍNA. *Crantz.* Gold of Pleasure.

Pouch subovate, many-seeded; *valves* inflated. *Cotyledons* incumbent (o||). *Filaments* simple. *Br.*—Name; χαμαι, *dwarf* or *humble*, and *Linum*, *flax*.

1. C. *satíva*, Crantz, (*common Gold of Pleasure*); pouch obovate margined, stigma simple, leaves lanceolate sagittate. *Br.*—

Hook. Scot. i. p. 198. *Engl. Fl. v. iii. p.* 164.—*Myagrum sativum, Linn.*

Fields, occasionally among flax, with which it has been imported. *Fl.* June, July. ⊙.—Two to 3 feet high, panicled above. *Flowers* small, yellow. *Pouches* very large, on long stalks.

16. KONIGA. *Adans. Br.* Koniga.

Pouch subovate; *valves* nearly plane; *cells* 1-seeded; *seed-stalks* with their base adnate to the dissepiment. *Seeds* (mostly) margined. *Cotyledons* accumbent (o=). *Cal.* patent. *Pet.* entire. *Hypogynous glands* 8! *Filaments* simple.—Name: *Konig* of Adanson; *Koniga*, of Mr. Brown, by whom it is intended "to commemorate the important services rendered to Botany by *Mr. König* of the British Museum."

1. K. *marítima*, Br. (*sea-side Koniga*); *Br. in Pl. of Denh. and Clapp. p.* 9.—*Alyssum maritimum, Willd.*—*Engl. Bot. t.* 1729. *Engl. Fl. v. iii. p.* 162.—*A. halamifolium, Bot. Mag.*—*A. minimum, and Clypeola maritima, Linn.*—*Glyce maritima, Lindl.*

Cliffs by the sea; near Aberdeen. Budleigh Salterton, Devon: said not to be wild. *Fl.* Aug. Sept. ♃.—*Stem* somewhat woody at the base. *Leaves* linear-lanceolate, hoary with bipartite appressed hairs. *Flowers* white and fragrant, honey-scented: hence the plant is much cultivated as an annual in our gardens.

ORD. II. SILIQUOSA. *Fruit a long narrow pod.* Gen. 15—28

17. DENTÁRIA. *Linn.* ~~Coral~~-root. Tooth-root.

Pod narrow-lanceolate, tapering; the *valves* flat, generally separating elastically, nerveless. *Seed-stalks* broad. *Cotyledons* accumbent (o=).—Name; *dens*, a *tooth*, from the tooth-like scales of the root.

H. 1. D. *bulbífera*, Linn. (*bulbiferous* Tooth ~~*Coral*~~*-root*); stem quite simple, lower leaves pinnated, upper ones simple with axillary bulbs. *Engl. Bot. t.* 309. *Engl. Fl. v. iii. p.* 186.—*Cardamine bulbifera, Br. in Hort. Kew. ed.* 2. *v. iv. p.* 101. *Hook. Scot. i. p.* 198.

Woods and shady places; rare. Sussex, Middlesex. Near Dupplin and Banks of the Esk, below Dalkeith, Scotland; *Mr. Coldstream. Fl.* April, May. ♃.—*Root* creeping, bearing thick, fleshy scales or tooth-like processes. *Stem* 1 foot to 1½ foot high. *Leaflets* lanceolate, as are the upper leaves themselves, serrated, somewhat fleshy, often bearing a small bulb in their axils. *Flowers* rather large, purple.

18. CARDAMÍNE. *Linn.* Ladies' Smock.

Pod linear; the *valves* flat, generally separating elastically, nerveless. *Seed-stalks* slender. *Cotyledons* accumbent (o=.)—Name; *καρδια*, the *heart*, and *δαμαω*, to *fortify*: from its supposed strengthening qualities.

H. 1. C. *amára*, Linn. (*bitter Lady's Smock*) ; leaves pinnated, radical leaflets roundish, cauline ones dentato-angulate, style oblique, stigma rather acute, stem rooting at the base. *Br.—Engl. Bot. t.* 1000. *Hook. Scot. i. p.* 198. *Engl. Fl. v. iii. p.* 190.

Wet meadows, near rivulets : not unfrequent. *Fl.* Apr. June. ♃.—One foot high. Well distinguished from the following by the broad angulato-dentate *leaflets* of its upper *leaves*, and the large white *flowers*, which have purple *anthers*. The *leaflets* of the radical *leaves* are rounded and entire.

H. 2. C. *praténsis*, Linn. (*common Meadow Lady's Smock*); leaves pinnate, radical leaflets roundish dentate, cauline ones lanceolate nearly entire, style straight, stigma capitate. *Br.—Engl. Bot. t.* 776. *Hook. Scot. i. p.* 198. *Engl. Fl. v. iii. p.* 189.

Moist meadows, abundant. *Fl.* May. ♃.—One to 2 feet high. *Flowers* large, blush-coloured ; sometimes found double, in which state the leaflets are known to produce new plants, when they come in contact with the ground, while still attached to the parent plant.

H. 3. C. *impátiens*, Linn. (*narrow-leaved Lady's Smock*) ; leaves pinnate, leaflets lanceolate somewhat cut or entire, stipules ciliated, petals linear or none. *Br.—Engl. Bot. t.* 80. *Hook. Scot. i. p.* 198. *Engl. Fl. v. iii. p.* 187.

Moist rocks, rare ; Derbyshire, Westmoreland and Cumberland. Near the Falls of the Clyde, and banks of the Doune, (*Mr. Jas. Wilson*), Scotland. *Fl.* May, June. ⊙.—One foot to 1½ foot high ; well distinguished by the fringed *stipules* at the base of each *leaf*. *Flowers* minute, white. It owes its specific name to the elastic force of the valves, when separating and discharging the seeds.

H. 4. C. *hirsúta*, Linn. (*hairy Lady's Smock*) ; leaves all pinnated and without stipules, leaflets petiolate radical ones roundish, stamens 4—6 equal in length to the petals, stigma nearly sessile. *Br.—Engl. Bot. t.* 492. *Hook. Scot. i. p.* 199. *Engl. Fl. v. iii. p.* 188. *C. flexuosa, With.—C. parviflora, Linn.?—Lightf. and With.*

Moist shady places, abundant. *Fl.* March—June. ⊙.—Varying much in size and luxuriance, according to soil and situation ; from 4 inches to 1 foot and more in height, as in the *C. sylvatica* of authors. *Leaflets* more or less angled or toothed, upper ones ovate or even linear ; hairy or glabrous. *Flowers* small, white.

5. C. *bellidifólia*, Linn. (*Daisy-leaved Lady's Smock*) ; leaves simple ovate entire upon rather long footstalks. *Engl. Bot. t.* 2355. *Hook. Scot. i. p.* 109. *Engl. Fl. v. iii. p.* 187.

Scotland, (*Mr. Milne*, in *With.*) County of Clare, Ireland ? a very dubious native. *Fl.* Aug. ♃.—One to 3 inches high. *Flowers* small, white.

19. Árabis. *Linn.* Rock-cress.

Pod linear, crowned with the nearly sessile *stigma* ; *valves* veiny or nerved. *Seeds* in one row. *Cotyledons* accumbent, (o=). *Cal.* erect. *Br.*—Name ; said to be originally an *Arabian* genus.

1. A. *strícta*, Huds. (*Bristol Rock-cress*); leaves toothed obtuse

hispid, radical leaves somewhat lyrate, stems hairy, petals and pods erect. *Engl. Bot. t.* 614. *Engl. Fl. v. iii. p.* 210.

Rare; St. Vincent's rocks, near Bristol; among limestone. *Fl.* March. ♃.—Habit of *Sisymbrium thalianum*, but perennial; *root-leaves* strongly ciliated, with frequently forked or trifid setæ, and rather hispid than hairy: *flowers* twice the size; *stem-leaves* few, small.

2. A. *petrǽa*, Dc. (*alpine Rock-cress*); radical leaves lyrato-pinnatifid stalked, cauline ones undivided sessile, pods spreading twice as long as the pedicels.—*A. hispida, Linn. Suppl.—Engl. Fl. v. iii. p.* 211. *Hook. Scot. i. p.* 199. *Cardamine petræa, Huds.—Linn. Sp. Pl.?—C. hastulata, Engl. Bot. t.* 409.

Alpine rocks in North Wales. Frequent on the high mountains of the west and north of Scotland; on the Cairngorum range. Hebrides; especially Skye, Ross-shire and Sutherland, *Prof. Graham. Fl.* June, July. ♃.—Three to 6 inches high, slender, glabrous or more or less hairy. *Flowers* moderately large, with a purplish tinge.

3. A. *ciliáta*, Br. (*fringed Rock-cress*); leaves somewhat toothed oval glabrous ciliated, radical ones nearly sessile obtuse, those of the stem semiamplexicaul, stem simple. *Br. in Hort. Kew. ed.* 2. *v. iv. p.* 107. *Hook. Scot. i. p.* 200. *Engl. Fl. v. iii. p.* 212.—*Turritis alpina, Linn.—Engl. Bot. t.* 1746.

By the sea-side at Runville, Cunnamara, Ireland; *Mr. J. T. Mackay.* Rocks near Loch Lea, in Glen Esk, Scotland, *Mr. G. Don. Fl.* July. ♂.—Four to 6 inches high. *Root-leaves* several, oval, or obovato-oblong, obtuse; *cauline* ones small. *Pods* nearly erect.

H. 4. A. *hirsúta*, Br. (*hairy Tower-Mustard*); leaves all hispid dentate, cauline ones semiamplexicaul, pods straight. *Br. in Hort. Kew. ed.* 2. *v. iv. p.* 107. *Hook. Scot. i. p.* 200. *Engl. Fl. v. iii. p.* 213.—*Turritis hirsuta, Linn.—Engl. Bot. t.* 587.

Walls, rocks and banks: frequent in many parts of England and Scotland. *Fl.* June. ♂.—One foot or more high, erect, stiff. *Stem* rough with spreading hairs, bearing many *leaves. Flowers* small, white. *Pods* numerous, erect.

H. 5. A. *Turríta*, Linn. (*Tower Wall-cress*); leaves amplexicaul, pods recurved flat and linear with the margins incrassated, bracteas foliaceous. *Engl. Bot. t.* 178. *Hook. Scot. i. p.* 200. *Engl. Fl. v. iii. p.* 214.

Old walls of Trinity and St. John's Colleges, Cambridge, of Magdalen College, Oxford. Castle of Cleish, Kinross-shire, Scotland, *Mr. Arnott. Fl.* May. ♂.

20. TURRÍTIS. *Linn.* Tower-mustard.

Pod elongated, two-edged; *valves* nerved or keeled. *Seeds* in a double row. *Cotyledons* accumbent, (o=). *Br.*—Named from *turris*, a *tower*; the leaves become gradually smaller upwards, and hence the plant assumes a pyramidal form.

1. T. *glábra*, Linn. (*long-podded Tower-Mustard*); radical

leaves toothed hairy, cauline ones amplexicaul entire glabrous. *Br.* —*Engl. Bot. t.* 777. *Hook. Scot. i. p.* 200. *Engl. Fl. v. iii. p.* 215.

Banks and road-sides in many parts of England, but not general; apparently most frequent in Norfolk and Suffolk. Bowling Bay, Scotland. *Fl.* May, June. ⊙.—One to two feet high. *Leaves* oblongo-lanceolate, glaucous; radical ones toothed or sinuated at the base; cauline ones sagittate. *Flowers* yellowish-white. *Pods* long, erect. Whole plant very erect and straight.

21. BARBARÉA. *Br.* Winter-cress.

Pod 4-angled and somewhat two-edged. *Cotyledons* accumbent (o=). *Seeds* in a single row. *Calyx* erect. *Glands* between the shorter filaments. *Br.*—Name; this plant was formerly dedicated to *St. Barbara.*

H. 1. B. *vulgáris*, Br. (*bitter Winter-cress, yellow Rocket*); lower leaves lyrate, the terminal lobe rounded the superior ones obovate toothed often pinnatifid at the base, pods linear tereti-4-angled acuminate.—*Br. in Hort. Kew. ed.* 2. *v. iv. p.* 109. *Hook. Scot. i. p.* 200. *Engl. Fl. v. iii. p.* 198.—*Erysimum Barbarea, Linn.*—*Engl. Bot. t.* 443.

Pastures and hedges, frequent. *Fl.* May—Aug. ♃.—One to two feet high, stout, furrowed and branched, glabrous. *Flowers* yellow. The *Rev. Colin Smith* finds by Loch Awe, Scotland, a *var.* with all the *leaves* lyrato-pinnatifid.

2. B. *præcox*, Br. (*early Winter-cress*); lower leaves lyrate upper ones pinnatifid, segments linear-oblong entire, pods linear obtuse compressed.—*Br. in Hort. Kew. ed.* 2. *v. iv. p.* 109. *Hook. Scot. v. i. p.* 201. *Engl. Fl. v. iii. p.* 199.—*Erysimum præcox, Sm.*—*Engl. Bot. t.* 1129.

Fl. Apr.—Oct. ♂.—One to two feet high; slenderer than the last in every part. *Flowers* smaller; *pods* longer.

22. NASTÚRTIUM. *Br.* Cress.

Pod nearly cylindrical (sometimes short); *valves* concave, neither nerved nor keeled. *Cotyledons* accumbent, (o=). *Cal.* patent. *Br.*—Name, from *Nasus tortus*, a *convulsed nose*, an effect supposed to be produced by the acrid and pungent quality of this plant.

H. 1. N. *officinále*, Br. (*Water-Cress*); leaves pinnate, leaflets ovate subcordate sinuato-dentate. *Br. in Hort. Kew. ed.* 2. *v. iv. p.* 110. *Hook. Scot. i. p.* 201. *Engl. Fl. v. iii. p.* 192.—*Sisymbrium Nasturtium, Linn.*—*Engl. Bot. t.* 855.

Brooks and rivulets, frequent. *Fl.* July. ♃.—A well known aquatic and an excellent and wholesome salad. *Lower leaves* large; of 5—7 distant *leaflets*, the terminal one the largest and roundest; *cauline leaflets* subovate, all rather succulent, glabrous, more or less waved or toothed. *Flowers* white. *Pods* about an inch long, patent.

H. 2. N. *sylvéstre*, Br. (*creeping Nasturtium*); leaves pinnate, leaflets lanceolate cut, those on the uppermost leaves entire. *Br. in Hort. Kew. ed.* 2. *v. iv. p.* 110. *Hook. Scot. i. p.* 201. *Engl. Fl. v. iii. p.* 193.—*Sisymbrium sylvestre, Linn.—Engl. Bot. t.* 2324.

Water-sides and waste places, but not common. *Fl.* July, Aug. ♃.—*Roots* much creeping. *Stem* 1 foot high, angular, branched. *Flowers* yellow. *Petals* much longer than the *calyx*. *Pods* short, patent or curved a little upwards.

H. 3. N. *terréstre*, Br. (*Marsh Nasturtium*); leaves lyrato-pinnatifid unequally toothed glabrous, root simply fibrous, petals not longer than the calyx. *Br. in Hort. Kew. ed.* 2. *v. iv. p.* 110. *Hook. Scot. i. p.* 201. *Engl. Fl. v. iii. p.* 193.—*N. palustre, DC.—Sisymbrium palustre, Willd.—S. amphibium, var. Linn.—S. terrestre, Engl. Bot. t.* 1747.

Watery places in many parts of England and Scotland. *Fl.* June—Sept. ⊙.—One foot high, branched. Distinguished readily from the last by its pinnatifid not pinnated *leaves*, the minute (yellow) *petals* and more turgid *pods*.

H. 4. N. *amphíbium*, Br. (*amphibious Nasturtium*); leaves oblong pinnatifid or serrated, root simply fibrous, petals longer than the calyx. *Br. in Hort. Kew. ed.* 2. *v. iv. p.* 110. *Hook. Scot. i. p.* 201. *Engl. Fl. v. iii. p.* 195.—*Sisymbrium amphibium, Linn.—Engl. Bot. t.* 1840.

Watery places, frequent. *Fl.* June—Aug. ♃.—Two to three feet high, branched. If any *leaves* grow under water, they are deeply pinnatifid, otherwise deeply serrated. *Pods* short, small, but turgid, erecto-patent.

23. SISÝMBRIUM. *Linn.* Hedge-mustard.

Pod rounded or angular. *Cotyledons* incumbent (o‖) (sometimes oblique), plane. *Calyx* patent, sometimes erect. *Br.*—Name, σισυμβριον; given by the ancients to some plant, perhaps allied to this.

H. 1. S. *officinále*, Linn. (*common Hedge-Mustard*); pods subulate pubescent close pressed to the main stalk, leaves muricate hairy, stem hispid. *Br.—Hook. Scot. i. p.* 202. *Engl. Fl. v. iii. p.* 196.—*Erysimum officinale, Linn.—Engl. Bot. t.* 735.

Waste places and by way-sides, plentiful. *Fl.* June, July. ⊙.—One to two feet high, branched. The deep and cut, serrated lobes are not always sufficiently decurved to constitute a *runcinate leaf:* the terminal lobe is very large, roundish in the lower *leaves*, and oblong in the upper ones. *Flowers* very small, pale yellow.

2. S. *írio*, Linn. (*broad Hedge-mustard, London Rocket*); leaves runcinate toothed and as well as the stem glabrous, pods nearly erect. *Br.—Engl. Bot. t.* 1631. *Engl. Fl. v. iii. p.* 197.

Waste ground, chiefly about London; in which city it covered the ground immediately after the great fire.—Faulkbourn, Essex and Berwick-upon-Tweed. *Ray. Fl.* July, Aug. ⊙.—*Flowers* yellow. *Pods* 2 inches long, erect.

H. 3. S. *Sophía*, Linn. (*fine-leaved Hedge-mustard or Flax-weed*); leaves doubly pinnatifid slightly hairy, lobes linear or oval, petals shorter than the calyx. *Engl. Bot. t.* 963. *Hook. Scot. i. p.* 202. *Engl. Fl. v. iii. p.* 197.

Waste places, among rubbish; frequent. *Fl.* Aug. ⊙.—Two feet high, branched. *Flowers* small, yellow. *Pods* linear, slender, erect, but not appressed, the footstalk being a little patent.

H. 4. S. *thaliánum*, (*common Thale-cress*); leaves somewhat toothed hairy, radical ones oblong subpetiolate, stem branched, pods ascending.—*Arabis thaliana, Linn.*—*Engl. Bot. t.* 901. *Hook. Scot. i. p.* 199. *Engl. Fl. v. iii. p.* 209.

Walls, dry banks and gravelly soils, common. *Fl.* Apr. May. ⊙.—Six to ten inches high, slender, with few *leaves*, and those mostly radical. *Flowers* small, white. The *Cotyledons* are *incumbent* here, not *accumbent* as in the true *Arabis*.

24. ERÝSIMUM. *Linn.* Treacle-mustard.

Pod 4-sided. *Seeds* not margined. *Cotyledons* incumbent (o‖). *Stigma* capitate, sometimes emarginate, with the lobes patent. *Cal.* erect. *Br.*—Name from ερυω, to *cure*, on account of the supposed virtues of the plant.

H. 1. E. *cheiranthoídes*, Linn. (*Worm-seed Treacle-mustard*); leaves lanceolate entire or slightly toothed with stellato-tripartite hairs, pods nearly erect their pedicels spreading, stigma undivided nearly sessile. *Br.*—*Engl. Bot. t.* 942. *Hook. Scot. i. p.* 202. *Engl. Fl. v. iii. p.* 200.

Fields, gardens and waste places, *Fl.* July, Aug. ⊙.—One foot to two feet high, branched. *Flowers* small, yellow.

H. 2. E. *Alliária*, Linn. (*Garlic Treacle-mustard, Jack by the Hedge or Sauce alone*); leaves heart-shaped stalked sinuato-dentate. *Engl. Bot. t.* 796. *Hook. Scot. i. p.* 202. *Engl. Fl. v. iii. p.* 201.

Hedge banks and waste places. *Fl.* May, June. ♂.—Two to 3 feet high, branched. *Leaves* large, veined, well known for their garlic-like smell. *Flowers* white. *Pods* erecto-patent.

3. E. *orientále*, Br. (*Hare's-ear Treacle-mustard*); leaves cordato-amplexicaul, radical ones obovate, all glabrous glaucous and entire.—*Br. in Hort. Kew. ed.* 2. *v. iv. p.* 117. *Engl. Fl. v. iii. p.* 202.—*Brassica orientalis, Linn.*—*Engl. Bot. t.* 1804.

Fields and cliffs near the sea: Essex, Suffolk, Sussex. It came up spontaneously in a field, that had been ploughed to form a garden, in the centre of the new square at Plymouth; *Rev. J. S. Tozer*. *Fl.* June. ⊙.

25. CHEIRÁNTHUS. *Linn.* Wall-flower.

Pod compressed or two-edged. *Cotyledons* accumbent (o=), *Cal.* erect, opposite leaflets saccate at the base. *Stigma* placed on a *style*, two-lobed, the lobes patent or capitate. *Br.*—Name from the Arabic *Kheyry*, not however originally applied to this Genus.

1. C. *Cheiri*, Linn. (*common Wall-flower*); leaves lanceolate acute entire with bipartite appressed hairs, pods linear, lobes of the stigma patent, stem shrubby. *Hook. in Fl. Lond. N. S. t.* 147.—*C. fruticulosus, Linn. Mant.*—*Engl. Bot. t.* 1934. *Hook. Scot. i. p.* 202. *Engl. Fl. v. iii. p.* 203.

Old walls. *Fl.* Apr. May. ♄.—A *variety*, with larger, more highly coloured and more flaccid *petals*, is commonly cultivated in gardens.

26. MATTHÍOLA. *Br.* Stock.

Pod (rounded or compressed) crowned with the connivent, two-lobed *stigma*, the lobes either thickened at the back, when the *cotyledons* are incumbent (o ||), or with a point at the base. *Cal.* erect. Longer *filaments* dilated. *Br.*—Named in honour of an Italian Physician, *Peter Andrew Matthioli.*

H. 1. M. *incána*, Br. (*hoary shrubby Stock*); stem shrubby upright branched, leaves lanceolate entire, pods cylindrical without glands. *Br. in Hort. Kew. ed.* 2. *v. iv. p.* 119. *Engl. Fl. v. iii. p.* 205.—*Cheiranthus incanus, Linn.*—*Engl. Bot. t.* 1935.

Cliffs to the eastward of Hastings; but not wild. *Fl.* May, June. ♄.—The origin of the Stock Gilly-flower of our gardens; where it is generally treated as an annual or biennial.

2. M. *sinuáta*, Br. (*great Sea Stock*); stem herbaceous spreading, leaves downy, lower ones sinuated, pods compressed muricated.—*Br. in Hort. Kew. ed.* 2. *v. iv. p.* 120. *Engl. Fl. v. iii. p.* 206.—*Cheiranthus sinuatus, Linn.*—*Engl. Bot. t.* 462.

Sandy shores of Wales and Cornwall. *Fl.* May, Aug. ♂.—*Flowers* purple, large, fragrant at night.

27. HÉSPERIS. *Linn.* Dame's Violet.

Pod 4-sided or two-edged. *Stigma* nearly sessile, the lobes connivent. *Cotyledons* incumbent (o ||), plane. *Cal.* erect. *Br.*—Named from έσπεϱυς, the *evening;* at which time the flowers yield a powerful fragrance.

1. H. *matronális*, Linn. (*common Dame's Violet*); stem erect, leaves ovato-lanceolate toothed, limb of the petals obovate, pods erect torulose their margins not thickened. *Hook. Scot. i. p.* 202. *Engl. Fl. v. iii. p.* 207.—*H. inodora, Linn.*—*Engl. Bot. t.* 731.

Hilly pastures, in several parts of Great Britain; but often the outcast of gardens. *Fl.* May, June. ♃.

28. BRÁSSICA. *Linn.* Cabbage, Turnep.

Pod 2-valved (with a sterile, one-or many-seeded beak). *Coty-*

ledons conduplicate (o>>). *Calyx* erect. *Br.*—Name derived from the Celtic *Bresic*, a *Cabbage*, according to Théis.

H. 1. B. *Nápus*, Linn. (*wild Navew, Rape or Cole-seed*); root caulescent fusiform, leaves smooth, upper ones cordato-lanceolate amplexicaul, lower ones lyrate toothed. *Engl. Bot. t.* 2146. *Hook. Scot. i. p.* 203. *Engl. Fl. v. iii. p.* 217.

Corn-fields and waste ground, frequent. *Fl.* May, June. ♂.—One to 2 feet high. *Lobes* of the lower *leaves* crenate; upper *leaves* entire, somewhat glaucous. *Petals* yellow, rather small. *Pods* torulose.—Cultivated for the oil produced by its seeds, which after pressure are formed into cakes, and found useful as manure and for the feeding of cattle.

2. B. *Rápa*, Linn. (*common Turnep*); root caulescent orbicular depressed fleshy, radical leaves lyrate scabrous, those of the stem nearly entire smooth. *Engl. Bot. t.* 2176. *Hook. Scot. i. p.* 203. *Engl. Fl. v. iii. p.* 217.

Borders of fields and waste places. *Fl.* Apr. May. ♂.—Varying exceedingly in height, according to soil. Upper *leaves* amplexicaul, ovato-acuminate, subglaucous; all more or less toothed. *Flowers* yellow, rather large.

H. 3. B. *olerácea*, Linn. (*Sea Cabbage*); root caulescent cylindrical fleshy, all the leaves glabrous glaucous waved and lobed. *Engl. Bot. t.* 637. *Hook. Scot. i. p.* 203. *Engl. Fl. v. iii. p.* 219.

Cliffs by the sea: Devonshire, Dover, Wales, Cornwall, Yorkshire and in the Firth of Forth. *Fl.* May, June. ♂.—Varying in height, 1—2 feet. *Leaves* thick, subcarnose, the uppermost undivided, but toothed. *Flowers* large, yellow.—The origin of our garden Cabbage.

H. 4. B. *monénsis*, Br. (*Isle-of-Man Cabbage*); leaves pinnatifid, stem nearly leafless glabrous, pods smooth, beak 1-(—3)-seeded. *Br. in Hort. Kew. ed.* 2. *v. iv. p.* 124. *Hook. Scot. i. p.* 203. *Engl. Fl. v. iii. p.* 220.—*Sisymbrium monense, Linn.*—*Engl. Bot. t.* 962.

Sea-shores of the Clyde, on the isles and shores on both sides of the Irish Channel. In Lorn, Scotland, *Rev. Colin Smith. Fl.* June, July. ♃.—*Stems* prostrate, slightly hispid, greedily eaten by cattle and sheep, and probably deserving of being cultivated as fodder.

5. B. *campéstris*, Linn. (*common wild Navew*); root and stem slender, leaves cordate acuminate amplexicaul, lower ones lyrate dentate subhispid. *Br.*—*Engl. Bot. t.* 2234. *Hook. Scot. i. p.* 203. *Engl. Fl. v. iii. p.* 218.

Corn-fields, and sides of rivers and ditches, in many places. *Fl.* June, July. ⊙.—*Root* fusiform, but slender. *Stem* hispid below. *Flowers* yellow. *Pod* upright, cylindrical or obscurely 4-angular, veiny; the *seeds* forming slight prominences; the *beak* awl-shaped, striated, square at its base.

29. SINÁPIS. *Linn.* Mustard.

Pod 2-valved (sometimes of 2 joints, of which the upper one is without valves). *Cotyledons* conduplicate (o ≫). *Cal.* patent. *Br.* (*Sinapis* and *Diplotaxis*, *DC*).—Name from the Greek σιναπι, which again *Théis* derives from the Celtic *Nap*, a *turnep* or *cabbage*.

1. S. *arvénsis*, Linn. (*wild Mustard, Charlock*); pods with many angles turgid and knotty longer than the two-edged beak. *Engl. Bot. t.* 1748. *Hook. Scot. i. p.* 204. *Engl. Fl. v. iii. p.* 221.

Corn-fields, too frequent.—

> " O'er the young corn the *Charlock* throws a shade,
> And clasping Tares cling round the sickly blade."

Fl. May, June. ⊙.—One to 2 feet high, rough. *Flowers* rather large, yellow.

H. 2. S. *álba*, Linn. (*white Mustard*); pods hispid turgid shorter than the ensiform beak, leaves pinnatifid. *Engl. Bot. t.* 1677. *Hook. Scot. i. p.* 204. *Engl. Fl. v. iii. p.* 222.

Waste places, frequent. *Fl.* July. ⊙.—*Stem* 1 foot to 1½ foot high, hairy. Lobes of the *leaves* variously cut and toothed, or erose. *Flowers* large, yellow. Well distinguished by its long *beak*.—This plant, while in a young state, is eaten under the name of *Mustard*, with *Cresses* (*Lepidium sativum*.)

3. S. *nígra*, Linn. (*common Mustard*); pods appressed glabrous tetragonous, style short subulate, upper leaves linear-lanceolate entire glabrous. *Engl. Bot. t.* 969. *Hook. Scot. i. p.* 204. *Engl. Fl. v. iii. p.* 222.

Under hedges and in waste places. *Fl.* June. ⊙.—Three to 4 feet high. Lower *leaves* large, lyrate, rough. *Flowers* yellow. *Pod* with a very short *beak*, or rather only the persistent *style* and *stigma* at its summit, quadrangular, its surface scarcely rugged.—The *seeds* yield the *mustard* of our tables.

H. 4. S. *ténuifolia*, Br. (*fine-leaved Mustard*); pods linear glabrous shortly beaked erect, peduncles spreading, leaves lanceolate very acute pinnatifid or bipinnatifid, stem glabrous. *Br.*—*Hook. Scot. i. p.* 204. *Engl. Fl. v. iii. p.* 223.—*Sisymbrium tenuifolium*, *Linn.*—*Engl. Bot. t.* 525.—*Diplotaxis tenuifolia*, *De Cand.*

Old walls about great towns, in the south, south-west and east of England; as London, Bristol, Yarmouth, Chester. Coast of Fife, Scotland, *Mr. Neill and Dr. Greville*. *Fl.* July, Aug. ♃.—*Root* thick, woody. *Stems* one foot, or one foot and a half high. *Flowers* large, yellow. The plant diffuses a very disagreeable smell.

H. 5. S. *murális*, Br. (*Sand Mustard*); pods linear glabrous shortly rostrate erect, peduncles spreading, leaves sinuate glabrous, stem spreading hairy. *Engl. Fl. v. iii. p.* 224.—*Sisymbrium murale*, *Linn.*—*Engl. Bot. t.* 1090.—*Diplotaxis muralis*, *De Cand.*

Sandy barren fields near the sea, in the south and south-west of England. Isle of Thanet, and below Bristol. *Fl.* Aug. Sept. ⊙.

30. Ráphanus. *Linn.* Radish.

Pod without *valves.* *Cotyledons* conduplicate. (o>>). *Calyx* erect. *Br.*—Name; ϱα, *quickly*, and φαινομαι, to *appear*; from its rapid vegetation.

1. R. *Raphanístrum*, Linn. (*wild Radish or jointed Charlock*); leaves simply lyrate, pods of one cell jointed striated. *Br.*—*Engl. Bot. t.* 856. *Hook. Scot. i. p.* 204. *Engl. Fl. v. iii. p.* 226.

Corn-fields, frequent. *Fl.* June, July. ⊙.—One to one foot and a half high. *Leaves* stalked, rough. *Flowers* yellow, veined.

2. R. *marítimus*, Sm. (*Sea-Radish*); leaves interruptedly lyrate, pods of one cell jointed striated. *Br.*—*Engl. Bot. t.* 1643. *Hook. Scot. i. p.* 204. *Engl. Fl. v. iii. p.* 226.

Beachy-head, Sussex. Sea-shore in Bute and Galloway, Scotland. *Fl.* June. ♂.—3—4 feet high. All the *leaves* rough and the lobes toothed. *Flowers* rather large, yellow.

5-22

CLASS XVI. MONADELPHIA.

*Filaments combined in one set.**

ORD. I. PENTANDRIA. 5 *perfect Stamens.*

1. Eródium. *L'Hérit.* Stork's bill.

Style 1. *Cal.* of 5 leaves. *Cor.* of 5 petals. *Glands* 5. Five alternate *stamens* imperfect. *Fruit* beaked, separating into 5 one-seeded *capsules*, each with a long spiral *awn*, bearded on the inside.—*Nat. Ord.* GERANIACEÆ. *Juss.*—Name; εϱωδιος, a *Heron;* the fruit resembling the beak of that bird.

1. E. *cicutárium*, Sm. (*Hemlock Stork's-bill*); peduncles many-flowered, leaves pinnate, leaflets sessile pinnatifid and cut, petals longer than the calyx, stems prostrate hairy. *Engl. Bot. t.* 1768. *Hook. Scot. i. p.* 205. *Engl. Fl. v. iii. p.* 229.—*Geranium cicutarium, Linn.*

Waste ground, frequent. *Fl.* Summer months. ⊙.—Whole plant hairy. *Flowers* in small *umbels*, purplish, or sometimes white.

2. E. *moschátum*, Sm. (*musky Stork's-bill*); peduncles many-flowered, leaves pinnate, leaflets nearly sessile ovate unequally cut, perfect stamens toothed at the base, stems depressed hairy. *Engl. Bot. t.* 902. *Engl. Fl. v. iii. p.* 230.—*Geranium moschatum, Linn.*

Mountainous pastures, rare. In the Craven of Yorkshire, and in Westmoreland, " more certainly wild than any where else, it having been long cultivated in gardens for its scent." *Sm.* Near Bristol; Shotover hill, Oxford, and on Ampthill warren, Bedfordshire. Near Plymouth, *Mr. Banks.* Simmond's Court, Carlingford Castle and Monk'stown Church, Ireland, *Mr. J. T. Mackay. Fl.* June, July. ⊙.—Larger than the last, and with much more entire *leaflets*, which yield a powerful smell of musk. Mr. Banks observes that the *petals* are more linear than in *E. cicutarium* and not ciliated at the claws.

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* In *Erodium* and *Geranium* the union of the filaments takes place only at the very base, and is with difficulty seen.

H. 3. E. *marítimum*, Sm. (*Sea Stork's-bill*); peduncles 1 or few flowered, leaves simple ovato-cordate stalked lobed and crenate, stems depressed slightly hairy. *Engl. Bot. t.* 646. *Engl. Fl. v. iii. p.* 231.—*Geranium maritimum, Linn.*

Sandy and gravelly sea-coasts, but rare; as in Sussex, Wales, (Ormes-head, *Mr. W. Wilson*,) and Cornwall. Hill of Howth, Ireland, *Mr. J. T. Mackay. Fl.* May—Sept. ♃.—*Flowers* exceedingly small and inconspicuous. *Petals* often wanting. β. smaller petals with purplis veins.

(*See* Linum *in* Cl. V. Ord. I.—Geranium *pusillum in* Ord. Decandria.)

See errata.

ORD. II. DECANDRIA. 10 *Stamens.*

2. GERÁNIUM. Linn. Crane's-bill.

Style 1. *Cal.* of 5 leaves. *Cor.* of 5 regular petals. *Glands* 5. *Fruit* beaked, separating into 5, 1-seeded *capsules*, each with a long naked awn.—*Nat. Ord.* GERANIACEÆ. *Juss.*—Name; γερανιον of the Greeks, from γαρανος, a *Crane*; the fruit resembling the beak of a Crane.

* *Peduncles 1-flowered.*

H, 1. G. *sanguíneum*, Linn. (*bloody Crane's-bill*); peduncles 1-flowered, leaves nearly orbicular in 5—7 deep lobes each of which is trifid. *Engl. Bot. t.* 272. *Hook. Scot. i. p.* 206. *Engl. Fl. v. iii. p.* 242.

Alpine or limestone pastures, in many places; but not very general. *Fl.* July. ♃.—One to a foot and a half high, swelling at the joints. *Peduncles* axillary, long. *Flowers* large, handsome, purple.

** *Peduncles 2-flowered.*

H. 2. G. *phǽum*, Linn. (*dusky Crane's-bill*); peduncles 2-flowered opposite the leaves, calyx slightly awned, petals waved, capsules keeled hairy below wrinkled above, stem erect. *Engl. Bot. t.* 322. *Hook. Scot. i. p.* 206. *Engl. Fl. v. iii. p.* 232.

Woods and thickets in many places, but often the outcast of a garden. *Sir Jas. E. Smith* considers it to be most truly wild perhaps in the mountainous parts of Yorkshire and Lancashire. With *white flowers* at the sands of Barrie, near Dundee, *Mr. Drummond. Fl.* May, June. ♃.—*Stem* 2 feet or more high, dichotomously branched. *Leaves* 3—7-lobed, lobes acute, cut and serrated. *Flowers* very dingy, purple-black.

3. G. *nodósum*, Linn. (*knotty Crane's-bill*); peduncles 2-flowered, leaves opposite 5 or 3-lobed pointed serrated, capsules

even downy all over. *Sm.—Engl. Bot. t.* 1091. *Engl. Fl. v. iii. p.* 233.

Said to have been found in the mountainous parts of Cumberland: and between Hatfield and Welwyn, Harts; but I have never seen British specimens. *Fl.* May—Aug. ♃.

H. 4. G. *sylváticum*, Linn. (*Wood Crane's-bill*); peduncles 2-flowered, leaves subpeltate with 5 or 7 deep and acute lobes which are cut and serrated, stem erect corymbose, petals slightly notched, capsules keeled hairy not wrinkled. *Engl. Bot. t.* 121. *Hook. Scot. i. p.* 206. *Engl. Fl. v. iii. p.* 234.

Woods, thickets and sides of rivers, chiefly in subalpine countries. *Fl.* June, July. ♃.—One foot to 3 feet high. *Flowers* purple, rather larger than those of *G. phæum*, but much smaller than in the following species.

H. 5. G. *praténse*, Linn. (*blue Meadow Crane's-bill*); peduncles 2-flowered, leaves 5-partite, lobes multipartite all the segments acute, capsules hairy not wrinkled. *Engl. Bot. t.* 404. *Hook. Scot. i. p.* 206. *Engl. Fl. v. iii. p.* 235.

Pastures and moist thickets, particularly near cascades, in mountainous countries: and near London. *Fl.* June, July. ♃.—One foot to 2 feet high. Distinguished by its large purple *flowers* and multipartite *leaves*.

H. 6. G. *pyrenáicum*, Linn. (*Mountain Crane's-bill*); peduncles 2-flowered, leaves reniform 5—7-lobed, lobes oblong obtuse trifid and toothed at the extremity, stem erect branched, petals with a deep notch twice as long as the calyx. *Engl. Bot. t.* 405. *Hook. Scot. i. p.* 206. *Engl. Fl. v. iii. p.* 239.

Meadows and pastures in many places, but not frequent. *Fl.* June, July. ♃.—Two to three feet high, much branched. Distinguished by the very obtuse segments of its lower *leaves* (for the upper ones are acute and less divided), and the rather small, numerous, purple *flowers*, with cleft *petals*.

H. 7. G. *lúcidum*, Linn. (*shining Crane's-bill*); peduncles 2-flowered, leaves roundish 5-lobed, lobes trifid and notched obtuse with a short mucro, calyx pyramidal angular dentato-tuberculate, capsules wrinkled. *Engl. Bot. t.* 75. *Hook. Scot. i. p.* 207. *Engl. Fl. v. iii. p.* 236.

Rocks, walls and roofs of houses, in mountainous countries. *Fl.* June, July. ⊙.—*Stems* spreading, shining (as are the *leaves*), brittle, swelling at the joints. *Leaves* small, lower ones often of a fine red. *Flowers* small, rose-coloured.

H. 8. G. *robertiánum*, Linn. (*stinking Crane's-bill or Herb Robert*); peduncles 2-flowered, leaves ternate or quinate, leaflets pinnatifid, segments mucronate, calyx angular hairy, capsules wrinkled. *Engl. Bot. t.* 1486. *Hook. Scot. i. p.* 207. *Engl. Fl. v. iii. p.* 235.

Woods, thickets, stony and waste ground, frequent. A small *var.* is common by the sea-sides, the β. of *Smith*. *Fl.* summer months. ⊙.—*Stems* spreading, red, brittle. *Flowers* purple, sometimes white.

H. 9. G. *mólle*, Linn. (*Dove's-foot Crane's-bill*); peduncles 2-flowered, leaves rounded or reniform lobed and cut downy, petals notched scarcely longer than the calyx, capsules transversely wrinkled, seeds without dots. *Engl. Bot. t.* 778. *Hook. Scot. v. i. p.* 207. *Engl. Fl. v. iii. p.* 237.

Dry pastures and waste places, common. *Fl.* Apr.—Aug. ⊙.—*Stems* spreading, procumbent, with long hairs. *Leaves* lobed; *lobes* broad, cut. *Flowers* small, purple. *Seeds* smooth.

10. G. *rotundifólium*, Linn. (*round-leaved Crane's-bill*); peduncles 2-flowered, leaves roundish or reniform lobed and cut downy, petals entire the length of the calyx, capsules smooth hairy, seeds dotted. *Engl. Bot. t.* 157. *Hook. Scot. i. p.* 207. *Engl. Fl. v. iii. p.* 240.

Pastures and waste ground in England, but not common. About Edinburgh. *Fl.* June, July. ⊙.—Distinguished from the preceding by the entire *petals*, and according to Sir Jas. E. Smith, by the smooth or even *capsules* and dotted *seeds*.

H. 11. G. *pusíllum*, Linn. (*small-flowered Crane's-bill*); peduncles 2-flowered, flowers pentandrous, petals notched, leaves rounded or reniform in 5—7 deep lobes, lobes trifid, capsules smooth carinated downy with erect appressed hairs, seeds smooth. *Engl. Bot. t.* 385. *Hook. Scot. i. p.* 207. *Engl. Fl. v. iii. p.* 238.

Waste ground and in gravelly soils, frequent: less common in Scotland. About Edinburgh and near Glasgow. *Fl.* June—Sept. ⊙.—*Stem* weak, prostrate. *Leaves* deeply lobed. *Flowers* very small, bluish purple.

H. 12. G. *disséctum*, Linn. (*jagged-leaved Crane's-bill*); peduncles 2-flowered, petals notched rather shorter than the much awned calyx, leaves 5-partite, lobes trifid or cut linear, capsules smooth hairy, seeds dotted. *Engl. Bot. t.* 753. *Hook. Scot. i. p.* 208. *Engl. Fl. v. iii. p.* 241.

Hedges and pastures, gravelly and waste places. *Fl.* May, June. ⊙.—*Stems* spreading. Distinguished by the much divided *leaves* and the short *foot-stalks* of the blossoms, which, as Curtis observes, thus appear as if sitting among the leaves.

H. 13. G. *columbínum*, Linn. (*long-stalked Crane's-bill*); peduncles 2-flowered shorter than the leaves which are 5-partite, the lobes divided into many acute segments, petals entire as long as the much awned calyx, capsules smooth glabrous, seeds dotted. *Engl. Bot. t.* 259. *Hook. Scot. i. p.* 208. *Engl. Fl. v. iii. p.* 241.

Dry pastures in several parts of Great Britain; especially in a dry gravelly or limestone soil. *Fl.* June, July. ⊙.—*Stem* very slender, procumbent, its hairs, as in *G. dissectum*, reflexed. *Capsules* quite glabrous.

(*See* Oxalis *in* Cl. X.)

ORD. III. POLYANDRIA. *Many stamens.*

3. LAVATÉRA. *Linn.* Tree-mallow.

Styles numerous. *Cal.* double; *ext.* 3-lobed. *Capsules* numerous, circularly arranged, 1-seeded.—*Nat. Ord.* MALVACEÆ. *Juss.*—Named in honour of two *Lavaters*, friends of Tournefort.

H. 1. L. *arbórea*, Linn. (*Sea Tree-mallow*); stem arborescent, leaves with about 7 angles downy plaited, peduncles axillary clustered single-flowered. *Engl. Bot. t.* 1841. *Hook. Scot. i. p.* 209. *Engl. Fl. v. iii. p.* 248.

Maritime rocks in the south and west of England. Islet of the coast of Anglesea, *Mr. W. Wilson.* Isles in the Firth of Forth. Ireland, *Mr. J. T. Mackay.* *Fl.* July, Aug. ♂.—Three to 5 feet high. *Flowers* large, purple rose-colour shining, darker at the base of the petals.

4. MÁLVA. *Linn.* Mallow.

Styles numerous. *Cal.* double; *ext.* of 3 leaves. *Capsules* numerous, circularly arranged, 1-seeded.—*Nat. Ord.* MALVACEÆ. *Juss.*—Name; altered from μαλαχη, *soft*, in allusion to the emollient nature of the species.

1. M. *sylvéstris*, Linn. (*common Mallow*); stem erect herbaceous, leaves with 7 rather acute lobes, peduncles and petioles hairy. *Engl. Bot. t.* 671. *Hook. Scot. i. p.* 208. *Engl. Fl. v. iii. p.* 244.

Waste places and way-sides; frequent in Ireland. In Scotland, not common. King's Park, Edinburgh. Cross-basket, near Glasgow. Kirkbean, Galloway; *Dr. Richardson.* *Fl.* June—Aug. ♃.—*Stem* 2—3 feet or more high, branched. *Flowers* large, 3 or 4 together, axillary. *Petals* large, obcordate, purplish rose-colour with deeper veins, combined by the base of their claws. Whole *plant*, especially the *fruit*, mucilaginous and emollient: and has hence a place in the Materia Medica.

H, 2. M. *rotundifólia*, Linn. (*dwarf Mallow*); stem prostrate, leaves roundish-cordate 5-lobed, fruitstalks bent down. *Engl. Bot. t.* 1092. *Hook. Scot. i. p.* 208. *Engl. Fl. v. iii. p.* 246.

β. petals as short as the calyx. *Engl. Fl. v. iii. p.* 247.—*M. pusilla*, *Engl. Bot. t.* 242.

Waste places and way-sides, frequent. *Fl.* June—Sept. ♃.—*Stems* from 10 inches to 1 foot in length, branching only from the root. *Flowers* small, roundish.

H. 3. M. *moscháta*, Linn. (*Marsh Mallow*); stem erect, radical leaves reniform in 5 or 7 broad cut lobes, cauline ones 5-partite pinnato-multifid their segments linear, calyx hairy, leaflets of the ext. calyx linear. *Engl. Bot. t.* 754. *Hook. Scot. i. p.* 209. *Engl. Fl. v. iii. p.* 247.

Meadows, pastures and road-sides, especially in a gravelly soil;

not unfrequent. *Fl.* July, Aug. ♃.—Two to three feet high. *Flowers* large, beautiful, rose-coloured, 1—2 from the axils of the terminal leaves. The *leaves* yield a faint musky smell if drawn through the hand.

5. ALTHǼA. *Linn.* Marsh-mallow.

Styles numerous. *Cal.* double; ext. of 6—9 leaves. *Capsules* numerous, circularly arranged, 1-seeded.—*Nat. Ord.* MALVACEÆ. *Juss.*—Name, αλθω, to *cure;* from its healing properties.

1. A. *officinális*, Linn. (*common Marsh-mallow*); leaves soft and downy on both sides cordate or ovate toothed entire or 3-lobed, peduncles axillary many-flowered much shorter than the leaves. *Engl. Bot. t.* 147. *Hook. Scot. i. p.* 208. *Engl. Fl. v. iii. p.* 244.

Marshes, but mostly near the sea: rare in Scotland; Solway Firth, and near Campsie. *Fl.* Aug. Sept. ♃.—Two to 3 feet high, remarkable for the dense, exquisitely soft and starry pubescence of the *leaves* and *stems*. *Flowers* 3—4 together, on axillary *stalks*, large, pale rose-colour.—Affords an abundant mucilage, and a decoction of it is in very general use in England, while in France it is made into lozenges, called *Pâte de Guimauve.*

2. A. *hirsúta*, Linn. (*hispid Marsh-mallow*); leaves cordate rough with hairs, lower ones obtusely upper acutely lobed crenated, stem hispid, peduncles single flowered longer than the leaves. *Cav. Diss. v. ii. t.* 29. *f.* 1. *Turn. et Dillw. Bot. Guide, v. i. p.* 352. *Hensl. Cat. Brit. Pl. p.* 5.

Fields and waste places, rare. In a field near Cobham, *Mr. J. Rayer* (in *Bot. Guide*). At the same station, that is, between Cobham and Cuxton, the *Rev. Prof. Henslow* finds it abundantly. *Fl.* June, July. ⊙.—Remarkable for its very hispid *stems* and *calyces.*

CLASS XVII. DIADELPHIA.

22 . [illegible]

Filaments combined in two sets;—(except in the first division of the 3d Order.)

ORD. I. HEXANDRIA. 6 *Stamens.*

1. CORÝDALIS. *De Cand.* Corydalis.

Cal. of 2, small, deciduous leaves. *Pet.* 4, one of them gibbous or spurred at the base. *Pod* 2-valved, compressed, many-seeded.—*Nat. Ord.* FUMARIACEÆ. *DC.*—Name; from κορυδαλις, the Greek name for the *Fumitory*, with which the present genus was, till lately, united.

1. C. *sólida*, (*solid-rooted Corydalis*); stem simple erect with a scale beneath the lower leaf, leaves 3—4 biternate their leaflets cuneate or oblong and as well as the bracteas cut, root solid. *Fumaria solida, Linn. MSS. Engl. Bot. t.* 1471. *Engl. Fl. v. iii. p.* 253.—*Corydalis bulbosa, De Cand.*—*Fumaria Halleri, Willd.*

Groves and thickets: at Kendal; Wickham, Hampshire; and near Birmingham. A very doubtful native. *Fl.* April, May. ♃.—*Flowers* large, purplish; *leaves* glaucous.

H. 2. C. *lútea*, Lindl. (*yellow Corydalis*); stem angular erect, leaves bipinnate, leaflets broadly cuneate cut or trifid, bracteas minute, pods nearly cylindrical shorter than the pedicels. *Fumaria lutea, Linn. Mant.*—*Engl. Bot. t.* 588. *Engl. Fl. v. iii. p.* 253.—*Corydalis capnoides, β. lutea, De Cand.*

On old walls, scarcely indigenous. Near Castleton, Derbyshire; Fountain's Abbey, Yorkshire. *Fl.* May. ♃.—*Flowers* yellow. *Stems* and *leaf-stalks* very brittle.

H. 3. C. *claviculáta*, De Cand. (*white climbing Corydalis*); stem much branched climbing, leaves pinnate, pinnæ stalked ternate or pedate, leaflets elliptical entire, petioles ending in tendrils, pedicels very short scarcely so long as the minute bracteas.—*Fumaria claviculata, Linn.*—*Engl. Bot. t.* 103. *Hook. Scot. i. p.* 211. *Engl. Fl. v. iii. p.* 254.

Bushy and shady places, in gravelly or stony soil. In Scotland, most abundant on walls and roofs of houses, especially in the Highlands. *Fl.* June, July. ⊙.—*Stems* long, very slender. Whole plant very delicate. *Flowers* small, pale yellow, almost white.

+2. Fumária. *Linn.* Fumitory.

Cal. of 2, deciduous leaves. *Pet.* 4, one of them gibbous or spurred at the base. *Fruit* indehiscent, 1-seeded, the *style* deciduous.—*Nat. Ord.* Fumariaceæ. *DC.*—Named from *fumus, smoke*, it is said on account of the smell.

H. 1. F. *capreoláta*, Linn. (*ramping Fumitory*); calycine leaves broadly oval scarcely acute toothed at the base entire above twice as long as the globose fruit, bracteas a little shorter (about $\frac{1}{3}$) than the fruit-bearing pedicel. *Arn.*—*Engl. Bot. t.* 943. *Hook. Scot. i. p.* 210. *Engl. Fl. v. iii. p.* 256. *De Cand. Prodr. v. i. p.* 130.

Corn-fields and gardens, frequent. *Fl.* May—Aug. ⊙.—A very variable plant. *Stems* generally climbing, sometimes only diffuse. *Leaves* bipinnate. *Leaflets* usually very broad; rarely, as about Edinburgh, narrow. On the Continent, the fructiferous *pedicels* are mostly recurved, and occasionally so in the south of England; but in Scotland and Wales they are seldom more than patent. Best distinguished by its large *petals* and *calycine leaves*. I am indebted to Mr. Arnott, who has paid particular attention to this genus both in Britain and upon the Continent, for the characters and remarks upon this and the 2 following species.

+ sign of good land.

H. 2. F. *officinális*, Linn. (*common Fumitory*); calycine leaflets ovato-lanceolate acute sharply toothed scarcely so long as the globose very abrupt or obcordate fruit, bracteas 2 or 3 times shorter than the fruit-bearing pedicel. *Arn.*

α. *Arn. MSS.;* erect, very glaucous, leaflets narrow. *F. officinalis, Engl. Bot. t.* 589. *Hook. Scot. i. p.* 210. *Engl. Fl. v. iii. p.* 255.

β. *Arn. MSS.;* diffuse or climbing, green, leaflets broad. *F. media, De Cand. Prodr. v. i. p.* 130.

α. In dry fields and road-sides, common.—β. also frequent, in highly cultivated fields and gardens. *Fl.* through the summer. ⊙.—The *F. media* of De Candolle, does indeed, at first sight, appear to be distinct from the more upright state of *officinalis*, and even to approach nearer to *F. capreolata:* but the *flowers* and *calyx* are scarcely more than half the size of the latter; and very constant to these characters.

H. 3. F. *parviflóra*, Lam. (*small-flowered Fumitory*); calycine leaves very minute, fruit globose slightly pointed, bracteas at first as long as the flower, afterwards about as short as the fructiferous pedicel, leaflets linear channelled. *Arn.*

α. *Arn. MSS.;* flowers rose-colour, leaves of a lively or yellowish green. *F. parviflora, Engl. Bot. t.* 590. *Engl. Fl. v. iii. p.* 256.

β. *Arn. MSS.;* flowers white tipped with dark purple, leaves glaucous. *F. parviflora, De Cand. Prodr. v. i. p.* 130.—*F. leucantha, Viviani, Cors. p.* 12.

α. Fields; rare. Woldham, near Rochester and near Epsom. In newly turned up ground for building, at Hill side, north of the Calton Hill, Edinburgh; *D. Stewart, Esq.*—β. Brookham, Surry; *Rev. James Dalton.* Mr. Waddel's grounds at Hermitage, near Leith; *D. Stewart, Esq.* *Fl.* Aug. Sept. ⊙.—The more common of these two *vars.* is that with white flowers. Viviani's description is not quite correct, when he says, there is no apiculus to the fruit of his *F. leucantha.* It exists on all the specimens found about Montpellier, where the plant is very common. The purple or rose-coloured *var.* comes very near to the *F. Vaillantii.*

4. F. micrantha. Small-flowered F. – See last edition
Edinburgh.

ORD. II. OCTANDRIA. 8 *Stamens.*

3. POLÝGALA. *Linn.* Milkwort.

Cal. of 5 leaves, 2 of them wing-shaped and coloured. *Petals* combined by their claws with the filaments, the lower one keeled. *Capsules* compressed. *Seeds* downy, crested at the hilum.—*Nat. Ord.* POLYGALEÆ. *Juss.*—Name; *πολυ, much*, and *γαλα, milk;* from some fancied property in the plant.

H. 1. P. *vulgáris*, Linn. (*common Milkwort*); keel crested, flowers in a terminal raceme, bracteas 3 to each pedicel, wings of the calyx ovate about as long as the corolla, stems simple herbaceous procumbent, leaves linear-lanceolate. *Engl. Bot. t.* 76. *Hook. Scot. i. p.* 211. *Engl. Fl. v. iii. p.* 259.

Dry hilly pastures, frequent. *Fl.* June, July. ♃.—*Stems* 4—8 inches long. *Cor.* beautifully crested, blue, purple, pink or white. *Cal.* leaves persistent, enclosing the *fruit.*

ORD. III. DECANDRIA. 10 *Stamens;* (all belonging to the *Nat. Ord.* LEGUMINOSÆ ; having the fruit a *Legume,* and the flowers *papilionaceous,* with the leaves mostly compound.

* *Filaments all connected at the base or monadelphous. The tube mostly split above.* Gen. 4—8.

4. ÚLEX. *Linn.* Furze.

Cal. of 2 leaves, with a small scale or *bractea* on each side at the base. *Legume* turgid, scarcely longer than the calyx.—Name ; according to Théis its root is *ec* or *ac,* a *sharp point,* in Celtic : whence too arises the French name *ajonc* or *acjonc,* a *sharp* or *spiny rush.*

H. 1. U. *europǽus,* Linn. (*common Furze, Whin or Gorse*) *;* calycine teeth obsolete connivent, bracteas ovate lax, branchlets erect. *Engl. Bot. t.* 742. *Hook. Scot. i. p.* 212. *Engl. Fl. v. iii. p.* 265.

Heathy places especially in sandy or gravelly soils; rare in the Scottish Highlands. *Fl.* in May and throughout the summer. ♄.—*Shrub* 3—4 or more feet high, with innumerable green striated *branches,* clothed with acute branching *spines,* having a few *leaves* at their base which are lanceolate, a little hairy, very minute. *Cal.* pubescent. *Cor.* bright yellow. Whether the *Ulex strictus* of Mr. Mackay's Cat. of Irish Plants, p. 67, should be referred to this or to the following, or be considered a distinct species, I am not able to say. It was discovered in the Marquess of Londonderry's Park, county of Down, by *Mr. John White ;* is readily propagated by cuttings, and is now well known in our gardens and nurseries under the name of the *Irish Furze.* It very rarely flowers; but may be at all times distinguished by its smaller size than *U. europæus,* its dense and compact, rather formal, mode of growth and its very upright branches, which are so soft, and succulent that sheep and cattle are very fond of them, and Mr. Murray of the Glasgow Bot. Garden, strongly, and very judiciously, recommends it to be planted for early spring feed.

2. U. *nánus,* Forst. (*dwarf Furze*) *;* teeth of the calyx lanceolate spreading, bracteas minute close pressed, branches reclining. *Sm.—Engl. Bot. t.* 743. *Hook. Scot. i. p.* 212. *Engl. Fl. v. iii.*
H. *p.* 266. Ulex Gallii — var.

Dry heaths, in many parts of England and Ireland. Dalguise and Pentland Hills, Scotland. *Fl.* mostly in autumn. ♄.—Smaller than the last in all its parts. The essential character, according to Sir James E. Smith, consists in the more distinct and spreading *calyx-leaves,* and the more minute, rounded, close-pressed and often hardly discernible *bracteas.* De Candolle says that the *U. provincialis, Loisel.* is, in size and character, between the present and the preceding species.

5. GENÍSTA. *Linn.* Green-weed.

Cal. 2-lipped, upper lip with two deep segments, lower one with

3 teeth. *Standard* oblong. *Legume* flat or turgid, many-seeded. —Name; from *Gen*, a *shrub*, in Celtic.

H. 1. G. *tinctória*, Linn. (*Dyer's Green-weed, Woad-Waxen*); unarmed erect, leaves lanceolate nearly glabrous, branches rounded striated, flowers spicato-racemose, legumes glabrous. *Engl. Bot. t.* 44. *Hook. Scot. i. p.* 212. *Engl. Fl. v. iii. p.* 263.

Pastures, thickets and borders of fields, frequent, in England and the Lowlands of Scotland. Between Killiney-hill and Bray, Ireland; *Dr. Allman*. *Fl.* July, Aug. ♄.—One to 2 feet high. *Leaves* rather distant. *Flowers* pale yellow, almost sessile, with a small floral leaf or *bractea* at the base very double, on rocks near Ilkley, Yorkshire, *Mr. Alderson*.—Employed to dye yarn of a yellow colour.

2. G. *pilósa*, Linn. (*hairy Green-weed*); unarmed procumbent, leaves lanceolate complicate silky beneath, flowers axillary on short pedicels, legumes downy. *Engl. Bot. t.* 208. *Engl. Fl. v. iii. p.* 263.

Dry sandy or gravelly Heaths. About Bury, Suffolk. Near the Lizard, Cornwall. Foot of Cader Idris, North Wales. *Fl.* May, and again in Sept. ♄.—A much branched, tortuose, woody-stemmed *plant*, of small size. *Flowers* small, bright yellow.

H. 3. G. *ánglica*, Linn. (*Needle Green-weed or Petty whin*); spinous, leaves ovato-lanceolate glabrous, spines simple, none on the flowering branches, flowers axillary somewhat racemed, legumes glabrous. *Engl. Bot. t.* 132. *Hook. Scot. i. p.* 212. *Engl. Fl. v. iii. p.* 264.

Moist Heaths and moory ground, not unfrequent. *Fl.* June. ♄.—*Stems* declined, very spinous. *Leaves* very small, *flowers* yellow.

Sarothamnus

6. Cýtisus. *Linn.* Cytisus or Broom.

Cal. 2-lipped; the upper lip nearly entire or with 2 small teeth, lower one 3-toothed. *Standard* large, broadly ovate. *Keel* very blunt, including the stamens. *Legume* flattened, many-seeded.—Name; κυτισος, of the ancient Greeks; said to be so called because it came from the island *Cythnos*, one of the Cyclades.

H. 1. C. *scopárius*, Linn. (*common Broom*); branches angled glabrous, leaves ternate stalked, upper ones simple, leaflets oblong, flowers axillary shortly pedicellate, legumes hairy at the margin. *Spartium scoparium, Linn.*—*Engl. Bot. t.* 1339. *Engl. Fl. v. iii. p.* 261.—*Genista scoparia, Lam.*—*Hook. Scot. i. p.* 211.

Dry hills and bushy places, frequent. *Fl.* June. ♄.—Three to 6 feet or more high. *Branches* long, straight, green. *Flowers* large, bright yellow; *keel* broad; *standard* and *wings* much spreading. *Legumes* large, compressed, dark brown.—The young green tops are said to be powerfully purgative and diuretic; and are very bitter.—Badge of the Highland Clan *Forbes.*

7. Onónis. *Linn.* Rest-harrow.

Cal. 5-cleft, its segments linear. *Standard* large, striated.

Legume turgid, sessile, few-seeded.—Name; ονος, an *ass*, because the plant is eaten by that animal.

H. 1. O. *arvénsis*, Linn. (*common Rest-harrow*); stem hairy, branches at length spinous, flowers mostly solitary, leaves ternate below, the rest simple serrated entire at the base. *Engl. Bot. t.* 682. *Hook. Scot. i. p.* 212. *Engl. Fl. v. iii. p.* 267.

Barren pastures and borders of fields. *Fl.* June—Aug. ♃.—A very variable plant, erect or procumbent and rooting, more or less spinous; *leaves* ovate or cuneate; *flowers* rather large, rose-coloured, sometimes white. Smith enumerates 3 *vars.* and De Candolle makes of them two species, *O. procurrens* and *O. spinosa.*

8. Anthýllis. *Linn.* Kidney-vetch.

Cal. inflated, 5-toothed. *Petals* nearly equal in length. *Legume* oval, 1—3 seeded, enclosed in the permanent calyx.—Name; ανθος, a *flower*, and ιουλος, a *beard* or *down*, from the downy calyces.

1. A. *vulneräria*, Linn. (*common Kidney-vetch or Lady's finger*); herbaceous, leaves pinnated unequal, heads of flowers in pairs. *Engl. Bot. t.* 104. *Hook. Scot. i. p.* 213. *Engl. Fl. v. iii. p.* 269.

Dry pastures, frequent. With red and sometimes white flowers, in Devonshire and Pembrokeshire, south of Ireland, mostly by the sea. *Fl.* June—Aug. ♃.—*Stem* ascending. *Leaflets* 5—9, lanceolate, entire, hairy, terminal one the largest. *Flowers* in crowded *heads*, mostly yellow, with hairy *calyces*, and digitate or palmate large *bracteas.*

** *Stamens diadelphous,* 9 *united and* 1 *free.*—Gen. 10—23.

† *Style downy beneath the stigma.* (*Viciеæ. DC.*). Gen. 9—13.

9. Órobus. *Linn.* Bitter-vetch.

Style linear, cylindrical, downy above. *Cal.* obtuse at the base, oblique at the mouth, its upper segments deeper and shorter.—Leaves *without tendrils.*—Name; ορω, to *strengthen* or *invigorate*, and βους, an *ox*, yielding food for cattle.

H. 1. O. *tuberósus*, Linn. (*tuberous Orobus*); leaves pinnated with 2 or 4 pairs of elliptical lanceolate leaflets glaucous beneath, stipules half arrow-shaped toothed at the base, stem simple erect. *Engl. Bot. t.* 1153. *Hook. Scot. i. p.* 213. *Engl. Fl. v. iii. p.* 272.

β. leaflets linear. *O. tenuifolius, Roth.—D. Don.*

Mountain thickets, frequent. β. Kinnaird; and Moy Woods, Inverness-shire, *Dr. MacLachlan.* *Fl.* May, June. ♃.—*Roots* tuberous, eaten by the Highlanders under the name of *Cormeille*, and said to repel hunger. *Stem* 1 foot high, winged. *Flowers* in long-stalked, axillary *racemes*, purple, veined. *Legume* long, pendulous, cylindrical, black.

2. O. *níger*, Linn. (*black Bitter-vetch*); leaves pinnate with from 3—6 ovate or elliptical leaflets, stipules linear lanceolate acute, stem branched angular erect. *Hook. Scot. ii. p.* 267. *Curt. Bot. Mag. t.* 2261. *Engl. Fl. v. iv. p.* 270.

Shaded rocks, Scotland. Den of Airly, Forfarshire; *Mr. T. Drummond.* Craiganain, a rock within 2 miles of Moy House, Inverness-shire; *Dr. MacLachlan. Fl.* June, July, ♃.—Remarkable in the circumstance of the plant's turning black when drying.

H. 3. O. *sylváticus*, Linn. (*Wood Bitter-vetch*); leaves pinnate hairy with 7—10 pairs of ovato-oblong acute leaflets, stipules half arrow-shaped, stem branched decumbent hairy. *Engl. Bot. t.* 518. *Hook. Scot. i. p.* 213. *Engl. Fl. v. iii. p.* 273.

Rocky and mountainous woods and thickets, north of England, Wales, and Lowlands of Scotland. *Fl.* July. ♃.—*Flowers* in unilateral racemes, purplish white.

10. Láthyrus. *Linn.* Vetchling and Everlasting Pea.

Style plane, downy above, broader upwards. *Cal.* with its mouth oblique, its upper segments shortest, leaves with tendrils. —Name λαθυρος, a leguminose plant of Theophrastus.

H. 1. L. *áphaca*, Linn. (*yellow Vetchling*); peduncles single-flowered, tendrils without leaves, stipules cordato-sagittate. *Engl. Bot. t.* 1167. *Engl. Fl. v. iii. p.* 274.

Borders of sandy and gravelly fields, rare. Cambridgeshire, Oxfordshire, Norfolk and near London. *Fl.* June—Aug. ⊙.—True *leaves*, each of a single pair of leaflets, are rare, and only exist on this singular plant in the early germination. They have been sent to me by *Professor Henslow. Flowers* yellow. + Seeds produce [illegible]

H. 2. L. *Nissólia*, Linn. (*crimson Vetchling or Grass Vetch*); peduncles mostly single-flowered, leaves simple linear lanceolate sessile without tendrils, stipules subulate. *Engl. Bot. t.* 112. *Engl. Fl. v. iii. p.* 275.

Bushy places and the grassy borders of fields, in many parts of England. *Fl.* May. ⊙.

3. L. *hirsútus*, Linn. (*rough-podded Vetchling*); peduncles 2-flowered, each tendril with a pair of linear-lanceolate leaflets, legumes hairy, seeds rough, stem and petiole winged. *Engl. Bot. t.* 1255. *Engl. Fl. v. iii. p.* 275.

Cultivated fields in England, but rare; Essex, and between Bath and Bristol. *Fl.* July. ⊙.—*Flowers* pale, except the *standard*, which is bright crimson.

H. 4. L. *praténsis*, Linn. (*Meadow Vetchling*); peduncles 2—8 flowered, tendrils with 2 lanceolate 3-nerved leaflets, stipules arrow-shaped as large as the leaflets. *Engl. Bot. t.* 670. *Hook. Scot. i. p.* 213. *Engl. Fl. v. iii. p.* 276.

Moist meadows and pastures, frequent. *Fl.* July, Aug. ♃.—*Stems* 2—3 feet long, climbing. *Flowers* yellow.—Cattle are said to be very fond of this common plant.

H. 5. L. *sylvéstris*, Linn. (*narrow-leaved Everlasting Pea*); peduncles 4—5 flowered, tendrils with a pair of sword-shaped leaflets, stem winged. *Engl. Bot. t.* 805. *Hook. Scot. i. p.* 213. *Engl. Fl. v. iii. p.* 277.

Thickets and hedges, in many parts of the middle and south of England. Shore near Whitehaven, Cumberland, *Mr. W. Wilson.* Coast of Angus-shire and Salisbury Craigs, Scotland. *Fl.* July, Aug. ♃.—*Stem* 5—6 feet long, broadly winged. *Flowers* large, greenish, with purple veins.

6. L. *latifólius*, Linn. (*broad-leaved Everlasting Pea*); peduncles many-flowered, tendrils with 2 ovato-elliptical mucronated leaflets, stem winged. *Engl. Bot. t.* 1108. *Hook. Scot. i. p.* 214. *Engl. Fl. v. iii. p.* 277.

Woods, rare, too often the outcast of gardens. Cambridgeshire, Cumberland, Worcestershire, Bedfordshire. Near Kirkcudbright, Scotland. *Fl.* July, Aug. ♃.—A well known climber and a great ornament of cottage gardens. Somewhat resembling the last, but with *leaves* vastly broader and *flowers* larger and more purple.

H. 7. L. *palústris*, Linn. (*blue Marsh Vetchling*); peduncles 3—6 flowered, tendrils with 2—4 pairs of linear lanceolate, acute leaflets, stipules half-arrow shaped lanceolate, stem winged. *Engl. Bot. t.* 169. *Hook. Scot. i. p.* 214. *Engl. Fl. v. iii. p.* 278.

Boggy meadows and thickets in several parts of England; near London, Berkshire, Leicestershire, Lancashire, Yorkshire, and I believe not unfrequently, in Norfolk. Scarcely indigenous to Scotland, though mentioned by Lightfoot. *Fl.* July, Aug. ♃.—*Stem* 2—3 feet high, climbing. *Leaflets* about 2 inches long. *Flower* bluish purple.

* 11. VÍCIA. *Linn.* Vetch.

Style with a tuft of hair beneath the stigma.—*Climbing* Plants. Leaves *with tendrils.*—Name; originally derived, according to Théis, from *Gwig*, Celtic; *Wicken*, in German; *βικιον* in Greek; *Vesce*, in French; in English, *Vetch.*

* *Peduncles elongated, many-flowered.*

H. 1. V. *sylvática*, Linn. (*Wood Vetch*); peduncles many-flowered longer than the leaves, leaflets elliptico-oblong mucronate, stipules lunate deeply toothed at their base. *Engl. Bot. t.* 79. *Hook. Scot. i. p.* 214. *Engl. Fl. v. iii. p.* 279.

Bushy places in mountainous countries, in Scotland, the north and north-west of England, Wales, and Ireland. It has been found near Newmarket and in Oxfordshire. *Fl.* July, Aug. ♃.—*Stems* 3—6 feet high, climbing by means of its branching tendrils. *Leaflets* 6—8 or 10 pairs. *Flowers* very beautiful, numerous, white, streaked with bluish veins.

H. 2. V. *Crácca*, Linn. (*tufted Vetch*); peduncles many-flowered longer than the leaves, flowers imbricated, leaflets lanceolate slightly hairy, stipules semisagittate nearly entire. *Engl. Bot. t.* 1168. *Hook. Scot. i. p.* 215. *Engl. Fl. v. iii. p.* 280.

Bushy places, frequent. *Fl.* July, Aug. ♃.—Two to three feet high,

H. * L. pisiformis. Appendix 19.

[illegible]

climbing. *Flowers* numerous, crowded, drooping and imbricated, of a fine bluish purple.

** *Flowers axillary, mostly subsessile.*

H. 3. V. *satíva*, Linn. (*common Vetch*); flowers mostly in pairs sessile, leaflets elliptic-oblong the lower ones retuse, stipules toothed impressed with a dark spot, seeds smooth. *Engl. Bot. t.* 234. *Hook. Scot. i. p.* 215. *Engl. Fl. v. iii. p.* 281.

Cultivated ground, frequent. *Fl.* June. ⊙.—One foot or more high. *Leaflets* variable in width and in number, from 2 to 6 pairs or more on a petiole. *Flowers* large, purple and blue or red. *Legumes* more or less downy, erect.

H. 4. V. *angustifólia*, Sibth. (*narrow-leaved crimson Vetch*); flowers mostly solitary nearly sessile, leaflets linear, lowermost ones inversely heart-shaped, stipules toothed with a pale depression beneath, seeds smooth. *Engl. Fl. v. iii. p.* 282. *Hook. in Engl. Bot. Suppl. t.* 2614.—*V. sativa*, *γ*. *Fl. Brit. p.* 770.

Dry pastures in a sandy or gravelly soil, in many places. All along the coast of Ayr, Scotland, *Mr. James Wilson.* *Fl.* June. ⊙.—Too nearly allied, I fear, to the last species.

H. 5. V. *lathyroídes*, Linn. (*Spring Vetch*); flowers sessile solitary, legumes glabrous, leaves generally in 3 pairs lower ones retuse, stipules entire not impressed with a dark spot, seeds "cubic" tubercled. *Engl. Bot. t.* 30. *Hook. Scot. i. p.* 215. *Engl. Fl. v. iii. p.* 283.

Road-sides and dry pastures, not unfrequent. *Fl.* Apr. May. ⊙.—Much resembling a starved state of *V. sativa*, or especially *V. angustifolia;* from both of which it may be known by its small size, 3—5 inches high, smaller more purple *flower*, scarcely so large as the leaflets, with a less reflexed *keel*, and by the rough or dotted *seeds*. Here, too, the *leaflets* are fewer on a petiole and the *tendril* is simple.

H. 6. V. *lútea*, Linn. (*rough-podded yellow Vetch*); flowers sessile solitary, standard glabrous, legumes reflexed hairy, stems diffuse, stipules coloured. *Engl. Bot. t.* 481. *Hook. Scot. i. p.* 215. *Engl. Fl. v. iii. p.* 284.

Rocky or stony ground, especially near the sea. Suffolk, Sussex. Glastonbury Tor-hill. Mearnshire, between Montrose and Arbroath: and hills at Queensferry, *G. Don:* at which latter place *Dr. Graham* finds it annually and in great plenty, but confined to one spot. *Fl.* June, July. ♃.—*Stems* 6—12 inches high, weak. *Leaflets* elliptical-lanceolate, hairy beneath and at the edges, 6—9 pairs on a petiole. *Flowers* large, yellow. *Legumes* compressed.

7. V. *hýbrida*, Linn. (*hairy-flowered yellow Vetch*); flowers nearly sessile solitary, standard hairy, legumes reflexed hairy, stems ascending, leaflets abrupt, stipules ovate unstained. *Engl. Bot. t.* 482. *Engl. Fl. v. iii. p.* 284.

On Glastonbury Tor-hill, *Ray*. *Fl.* June, July. ♃.—Similar to the last, but essentially distinguished by its hairy *standard*.

8. V. *lævigáta*, Sm. (*smooth-podded Vetch*); flowers solitary nearly sessile, legumes reflexed glabrous, stems ascending, stipules cloven unstained, leaflets bluntish very glabrous. *Engl. Bot. t.* 483. *Engl. Fl. v. iii. p.* 285.

On the pebbly shore of Weymouth, Dorsetshire. *Fl.* July, Aug. ♃.—Allied to the two last in its herbage. *Petals* "pale blue or whitish, seldom yellowish, all quite glabrous."

H. 9. V. *sépium*, Linn. (*Bush Vetch*); flowers mostly in fours somewhat stalked, legumes upright glabrous, leaflets ovate obtuse gradually smaller upwards upon the petiole. *Engl. Bot. t.* 79. *Hook. Scot. i. p.* 215. *Engl. Fl. v. iii. p.* 286.

Woods and shady places, frequent. *Fl.* June, July. ♃.—One foot to 2 feet high. *Leaflets* large. One or two of the four *flowers* which grow together are often sterile.

H. 10. V. *bithýnica*, Linn. (*rough-podded purple Vetch*); flowers stalked mostly solitary, legumes upright rough, petioles with two pairs of lanceolate leaflets, stipules toothed. *Engl. Bot. t.* 1842. *Engl. Fl. v. iii. p.* 287.

Bushy places in gravelly soil, mostly near the sea, but rare. Near Doncaster, Yorkshire; in Dorsetshire and Hampshire. Frindsbury, Kent, *Rev. Prof. Henslow.* *Fl.* July, Aug. ♃.—*Flowers* purple, all but the wings which are whitish.—Lamarck and De Candolle refer this to *Lathyrus*; and Sir J. E. Smith acknowledges that in habit it accords better with that genus, but that its *stigma* is truly that of *Vicia*: as I find it to be in Professor Henslow's specimens from Kent.

~~12. PÍSUM. *Linn.* Pea.~~

~~*Style* triangular. *Stigma*, along the prominent upper angle, downy. *Sm.*—Leaves *with tendrils and mostly few leaflets.*—Name; in Celtic *pis*; *pisen* plural: in Greek πισον, meaning *a pea.*~~

removed to Lathyrus. ~~1. P. *marítimum*, Linn. (*Sea Pea*); stem angled, petiole flattened on the upper side, stipules broad subsagittate, peduncles many-flowered shorter than the leaves. *Engl. Bot. t.* 1046. *Engl. Fl. v. iii. p.* 270.~~

~~Pebbly beach of Lincolnshire, Suffolk, and the south coast of England. County of Kerry, Ireland, *Mr. J. T. Mackay.* *Fl.* July. ♃.—This has more the habit of a *Lathyrus* than of a *Pisum*, though the *style* most resembles the latter.~~

13. ERVUM. *Linn.* Tare.

Stigma capitate, downy all over.—Name derived according to Théis from the Celtic *erw*, *a ploughed field*, of which it is the pest.

H. 1. E. *hirsútum*, Linn. (*hairy Tare*); peduncles many-flowered, legumes hairy 2-seeded, leaflets linear oblong truncated. *Engl. Bot. t.* 971. *Hook. Scot. i. p.* 216. *Engl. Fl. v. iii. p.* 289.

Corn-fields and hedges; too frequent. *Fl.* June. ⊙.—*Stems* 2—3 feet long, weak, straggling and climbing. *Leaflets* numerous. *Flowers* very insignificant, purplish-blue.

H. 2. E. *tetraspérmum*, Linn. (*smooth Tare*); peduncles 2-flowered, legumes glabrous 4-seeded, leaflets linear-oblong obtuse. *Engl. Bot. t.* 1223. *Hook. Scot. i. p.* 216. *Engl. Fl. v. iii. p.* 288.

Moist corn-fields, hedges, &c. Rare in Scotland; and Mr. Arnott doubts if it has been ever found there. Not a native of Ireland. *Fl.* June. ⊙.—Smaller and slenderer than the last. *Leaflets* fewer.

†† *Style glabrous.* Gen. 14—22.

+ *Legume of* 2, *more or less complete, longitudinal cells.*

14. ASTRÁGALUS. *Linn.* Milk-vetch.

Keel of the *corolla* obtuse. *Legume* 2-celled (more or less perfectly); *cells* formed by the inflexed margins of the lower suture. —Named from *αστραγαλος*, the *vertebra*, in allusion to the knotted root of that individual plant to which it was formerly applied.

H. 1. A. *glycyphýllus*, Linn. (*sweet Milk-vetch*); stem prostrate, legumes somewhat triangular curved sessile glabrous, leaves longer than the peduncles, leaflets oval. *Engl. Bot. t.* 203. *Hook. Scot. i. p.* 217. *Engl. Fl. v. iii. p.* 294.

Woods and thickets, chiefly in a gravelly or calcareous soil; rare in Scotland and found principally about Edinburgh. *Fl.* July. ♃.—Well distinguished by its great size. *Stem* prostrate, 2—3 feet long. *Leaves* with large, ovate, acute *stipules*. *Flowers* dingy yellow. *Legumes* an inch or more long, curved.

H. 2. A. *hypoglóttis*, Linn. (*purple Mountain Milk-vetch*); stem prostrate, leaflets slightly emarginate, legumes erect capitate hairy, their cells 1-seeded. *Engl. Bot. t.* 274. *Hook. Scot. i. p.* 217. *Engl. Fl. v. iii. p.* 294.

Dry gravelly or chalky pastures; chiefly in the east of England and Scotland, as far north as Blair in Athol. *Fl.* July. ♃.—*Stem* weak, a few inches in length. *Leaflets* elliptic-ovate, retuse, hairy. *Peduncles* longer than the leaves, curved upwards. *Heads of flowers* large, in proportion to the size of the plant, bluish-purple. *Legumes* ovate, acuminate, hairy.—Mr. Drummond finds it with *white flowers* at the sands of Barrie.

* 15. OXÝTROPIS. *De Cand.* Oxytropis.

Keel of the *Corolla* with a narrow point. *Legume* 2-celled (more or less perfectly); the *cells* formed by the inflexed margins of the upper suture.—Name; *οξυς*, *sharp*, and *τροπις*, a *keel*, one of the essential characters of the Genus, as distinguishing it from the preceding.

1. O. *uralénsis*, De Cand. (*hairy Mountain Oxytropis*); silky, stem none, scape longer than the leaves, legumes erect ovato-cylindrical inflated pubescent 2-celled, style persistent.—*Astragalus*

* A. alpinus – Appen. 20.

uralensis, Linn.—Engl. Bot. t. 466. *Hook. Scot. i. p.* 216. *Engl. Fl. v. iii. p.* 295.

Dry mountain pastures, in Scotland. Queensferry; Montrose, *Dr. Alexander Murray.* Frequent in Sutherlandshire, upon the coast. *Fl.* July. ♃.—A very beautiful plant, clothed with silky pubescence, especially on the young leaves. *Leaflets* 8—12 pairs with an odd one, narrow, ovate, acute. *Scape*, when in fruit, 4—6 inches high. *Flowers* capitate, bright purple.

H. 2. O. *campéstris*, De Cand. (*yellowish Mountain Oxytropis*); somewhat silky stemless, scape about the same length as the leaves, legumes erect ovate inflated pubescent semibilocular.—*Astragalus campestris, Linn.—Engl. Bot. t.* 2522. *Hook. Scot. i. p.* 217. *Engl. Fl. v. iii. p.* 296.

Rocks facing the south, a little to the north of Bradooney, in the Clova mountains, *G. Don.* *Fl.* July. ♃.—*Leaflets* elliptical-lanceolate. *Flowers* capitate, yellowish, tinged with purple.

+ + *Legume more or less jointed.*—Gen. 17. 18.

16. ORNITHÓPUS. *Linn.* Bird's-foot.

Legume somewhat cylindrical, curved, of many close, single-seeded joints; *keel* very small.—Name; ορνις, ορνιθος, a *bird*, and πους, a *foot*, from the similarity of the seed-vessels to a bird's foot.

H. 1. O. *perpusíllus*, Linn. (*common Bird's foot*); leaves pinnated with 6—9 pairs of leaflets and a terminal one, flowers capitate bracteated, legumes curved upwards. *Engl. Bot. t.* 369. *Hook. Scot. i. p.* 216. *Engl. Fl. v. iii. p.* 290.

Sandy and dry gravelly soils. Not common in Scotland. Very fine in thin soil upon whin-stone at Touch, Stirlingshire; *Dr. Graham.* Sandy fields in Kinross-shire; *Mr. Arnott.* *Fl.* June. ⊙.—*Stems* from 2—6 inches high, much branched at the base and spreading. *Leaflets* oval. *Flowers* white with red lines.

17. HIPPOCRÉPIS. *Linn.* Horse-shoe vetch.

Legume compressed, submembranaceous, of numerous joints, which are curved like a horse-shoe, so that each legume has many deep notches on one side.—Name ιππος, a *horse*, and κρηπις, a *shoe*, from the form of the fruit.

H. 1. H. *comósa*, Linn. (*tufted Horse-shoe vetch*); legumes 5—8 clustered pedunculated curved scabrous sinuated at each margin. *Engl. Bot. t.* 31. *Hook. Scot. i. p.* 216. *Engl. Fl. v. iii. p.* 291.

Chalky and limestone banks and pastures, plentiful in the chalk counties of England. Dundonald near Ayr, Scotland. *Fl.* July. ♃.—*Stems* 4—6 inches high, much branched and woody at the base. *Leaflets* in 4—6 pairs, with an odd one, obovato-elliptical. *Peduncles* long. *Flowers* yellow, pale, much resembling those of *L. corniculatus*; but the *legume* is quite different and very remarkable.

+ + + *Legume of one cell, one or many-seeded, (not formed of many joints.)* Gen. 18—22.

18. Onóbrychis. *Tourn.* Saint-foin.

Legume sessile, of one indehiscent joint, compressed, coriaceous, prickly, crested or winged.—Name; from ονος, an *ass*, and βρυχω, *to eat;* the plant affording a valuable fodder.

H. 1. O. *satíva*, Lam. (*common Saint-foin*)*;* leaves pinnated nearly glabrous, legumes toothed at the margin and ribs, wings of the corolla not longer than the calyx, stem elongated. *Sm.—Hedysarum Onobrychis, Linn.—Engl. Bot. t.* 96. *Engl. Fl. v. iii. p.* 292.

Dry chalky hills and open downs, in various parts of England. *Fl.* June, July. ♃.—A plant cultivated to great advantage in dry and, especially, chalky soils.

19. Melilótus. *Tourn.* Melilot.

Legume 1 or few-seeded, indehiscent, longer than the calyx. *Petals* distinct, deciduous.—Flowers *racemose.* Leaves *ternate.* —Name; *mel, honey*, and *Lotus*, the Genus so called.

H. 1. M. *officinális*, Linn. (*common yellow Melilot*)*;* legumes 2-seeded ovate wrinkled, racemes lax, corolla more than twice as long as the calyx, petals nearly equal in length, stem erect.—*Trifolium Melilotus, Linn.—Engl. Bot. t.* 1340. *Hook. Scot. i. p.* 217. *Engl. Fl. v. iii. p.* 297.

Bushy places and way-sides, frequent. *Fl.* June, July. ⊙.—Two or three feet high. *Leaves* obovate, serrated. *Flowers* yellow, in unilateral, pedunculated, axillary *racemes.*—This plant, in the act of drying, smells like *Anthoxanthum odoratum.*

2. M. *leucántha*, Koch, (*white-flowered Melilot*)*;* legumes 2-seeded ovate wrinkled, racemes lax, corolla twice as long as the calyx, keel and wings shorter than the standard, stem erect. *De Cand. Prod. v. ii. p.* 187.—*M. vulgaris, Willd.—Trifolium officinale,* β. *Linn.—Sturm, Deutschl. Fl. cum Ic.—Sm. in Fl. Græca.—Lloyd Scot. Pl.—T. germanicum, Sm. in Rees' Cycl.*

Denes at Yarmouth. Corn-fields at Aberlady Bay near Edinburgh, *Mr. Lloyd. Fl.* July. Aug. ⊙ ?—It is singular that this plant should never have been noticed, even as a *var.* of *M. officinalis*, by any British Botanist.

20. Trifólium. *Linn.* Trefoil.

Legume 1 or more-seeded, indehiscent, shorter than the calyx by which it is enclosed, (except in *T. ornithopodioides*). *Petals* mostly combined by their claws and persistent.—Flowers *capitate.* Leaves *ternate.*—Name; so called on account of its 3 leaves or leaflets.—Badge of the Highland Clan *Sinclair.*

* *Legumes with several seeds.*

H. 1. T. *ornithopodioídes*, Linn. (*Bird's-foot Trefoil*)*;* flowers about

3 together, legumes naked with about 8 seeds twice as long as the calyx, leaflets obovate toothed at the extremity, stems decumbent. *Engl. Bot. t.* 1047. *Hook. Scot. i. p.* 218. *Engl. Fl. v. iii. p.* 298. *Trigonella ornithopodioides, De Cand. Lindl.—Falcatula, Brot.*

Dry sandy pastures, but not very general; mostly on the East coast. About Edinburgh. *Fl.* June. ⊙.—*Stems* spreading, 3—5 inches in length. *Flowers* small. The long *legumes, petals,* and the habit of this plant do not accord with this genus, nor yet with *Trigonella.*

H. 2. T. *répens,* Linn. (*white Trefoil or Dutch Clover*)*;* heads umbellate globose, legumes with 4 seeds, calyx-teeth unequal, leaflets obcordate serrulate, stem creeping. *Engl. Bot. t.* 1769. *Hook. Scot. i. p.* 218. *Engl. Fl. v. iii. p.* 299.

Meadows and pastures, frequent. *Fl.* through the summer. ♃.—Heads of *flowers* white. Each flower is on a footstalk which becomes recurved after flowering, and then all the *legumes* are drooping and covered with the withered brown *corolla.* This is the *Dutch Clover* of Agriculturists, and in great repute for pastures. The *leaflets* have often a dark spot at their base, with a white line bordering it near the middle.

** *Legumes* 1 *or* 2*-seeded. Standard deciduous or unaltered. Calyx not inflated, mostly hairy.*

H. 3. T. *subterráneum,* Linn. (*subterraneous Trefoil*)*;* heads lateral stalked hairy of few flowers, at length deflexed and throwing out from their centre thick fibres palmated at the extremity, (abortive calyces,) which are closely bent down over the reflexed fruit. *Engl. Bot. t.* 54. *Engl. Fl. v. iii. p.* 300.

Dry gravelly pastures in England. *Fl.* May. ⊙.—From 3 to 6 or 8 inches long, decumbent, hairy, with large, ovate, membranaceous *stipules. Flowers* long and very slender, almost white. *Peduncles* at length elongated, and the heads of flowers reach the ground. The young *fruit* then becomes deflexed, and from the top of the peduncle there arise many thick short fibres with 5 palmated teeth at their extremity, which soon become recurved over the fruit and serve to bury it in the soil. From the number of teeth terminating each of the above-mentioned fibres, as well as from their comparative length and thickness, it is natural to conclude, with De Candolle, that the latter are abortive *calyces. Petals* partially caducous. *Legumes* large, ovato-globose, 1-seeded.

4. T. *ochroleucum,* Linn. (*sulphur-coloured Trefoil*)*;* heads terminal solitary, teeth of the calyx subulate, lower one thrice as long as the rest, leaflets elliptic or obovate, those of the lower leaves heart-shaped, stem ascending downy. *Engl. Bot. t.* 1224. *Engl. Fl. v. iii. p.* 301.

Pastures and way-sides in England, on a gravelly or chalky soil. Frequent also in the clayey soil of Norfolk and Suffolk. *Fl.* July, Aug. ♃.—A foot or more high. *Petioles* long. *Stipules* subulate, ribbed. Heads of *flowers* large, at first hemisphærical, at length oval, cream-coloured. The *corolla* turns brown and is persistent.

5. T. *praténse,* Linn. (*common purple Trefoil*)*;* heads dense ovate, teeth of the calyx setaceous, lower one longer than the rest

$\frac{1}{2}$ as long as the tube of the corolla, stipules ovate bristle-pointed, leaflets oval or obcordate, stems ascending. *Engl. Bot. t.* 1770. *Hook. Scot. i. p.* 218. *Engl. Fl. v. iii. p.* 302.

Meadows and pastures, frequent. *Fl.* summer months. ♃.—*Flowers* reddish-purple. This is the common *Clover*, so much cultivated for hay. The *leaflets* are oval, obovate, or obcordate, often marked with a white lunulate spot.—Mr. W. Wilson finds a monstrosity of this at Anglesea, in which the flowers have the stamens as usual, but the *germen* is changed into *bracteas*, enclosing the rudiments of a second head of flowers, and the *stigma* becomes a leaflet.

6. T. *médium*, Linn. (*zigzag Trefoil*); heads of flowers lax subglobose solitary terminal, calyx-teeth setaceous, lower one longer than the rest about equal to the tube of the corolla, stipules lanceolate acuminate, leaflets elliptical, stems branched zigzag. *Engl. Bot. t.* 190. *Hook. Scot. i. p.* 228. *Engl. Fl. v. iii. p.* 302.

Pastures, frequent. *Fl.* July. ♃.—*Stem* remarkably zigzag. Heads of *flowers* larger than the last, deeper purple. *Leaves* spotless. Inferior in point of quality to *T. pratense*, but better fitted to pasture on light soils.

H. 7. T. *marítimum*, Huds. (*Teasel-headed Trefoil*); heads ovato-globose sessile terminal, teeth of the calyx broad acuminate rigid, the lower one much longer and larger than the rest shorter than the claws of the petals, all of them at length enlarged and spreading, stipules subulato-lanceolate, leaflets oblongo-obovate, stem ascending. *Engl. Bot. t.* 220. *Engl. Fl. v. iii. p.* 303.

Salt marshes on the East as far north as Norfolk, and South coast of England, as far as Somersetshire. Near Kilbarrick Church, Ireland, *Mr. J. T. Mackay.*—*Fl.* June, July. ⊙.

8. T. *stellátum*, Linn. (*Starry-headed Trefoil*); heads terminal globose stalked hairy, calyx-teeth longer than the corolla setaceous at length dilated veined and spreading, its tube closed with hairs, stipules broadly ovate crenate ribbed, leaves obcordate. *Engl. Bot. t.* 1545. *Hook. in Fl. Lond. N. S. t.* 95. *Engl. Fl. v. iii. p.* 304.

Sea-coast, Sussex, between Shoreham harbour and the sea, in great plenty; *Mr. Borrer:* but probably introduced in ballast. *Fl.* July, Aug. ⊙.—A singular and beautiful species, with long, narrow *calyces*, and, at first, straight, setaceous *teeth*, which conceal the small cream-coloured *corolla*, and then become greatly enlarged, spreading in a stellated manner.

H 9. T. *arvénse*, Linn. (*Hare's-foot Trefoil*); heads very hairy soft nearly cylindrical terminal stalked, calyx-teeth longer than the corolla permanently setaceous, at length somewhat spreading, stipules ovato-acuminate, leaflets lanceolate obtuse, stems erect much branched. *Engl. Bot. t.* 944. *Hook. Scot. i. p.* 218. *Engl. Fl. v. iii. p.* 305.

Corn-fields and dry pastures, abundant. *Fl.* July, Aug. ⊙.—*Stem* 6—12 inches high. *Flowers* very minute, almost white. Remarkable for its numerous, subcylindrical, soft, hairy *heads* or *spikes*.

H. 10. T. *scábrum*, Linn. (*rough rigid Trefoil*); heads terminal and axillary sessile ovate, calyx-teeth unequal subulate very rigid 1-nerved at length patent, leaflets obcordate serrulate, stems procumbent. *Engl. Bot. t.* 903. *Hook. Scot. i. p.* 219. *Engl. Fl. v. iii. p.* 306.

Chalky, or dry sandy fields, in several parts of England. Sea-shores, near Edinburgh and Dunbar, Scotland. *Fl.* May, June. ⊙—A small spreading *plant*, with many terminal and axillary, sessile, ovate *heads*, very rigid in fruit. *Leaflets* strongly nerved.

H. 11. T. *glomerátum*, Linn. (*smooth round-headed Trefoil*); heads terminal and axillary sessile globose, calyx-teeth ovate very acute leafy veiny at length reflexed, leaflets obcordate toothed, stems procumbent. *Engl. Bot. t.* 1063. *Engl. Fl. v. iii. p.* 307.

Gravelly heaths and pastures in the East and South of England. *Fl.* June. ⊙.—Similar to the last, but with rounder *heads*, and broader, greener, and more foliaceous and spreading *teeth* to the *calyx*.

H. 12. T. *suffocátum*, Linn. (*suffocated Trefoil*); heads lateral sessile roundish, petals shorter than the membranaceous faintly striated calyx whose teeth are broadly subulate spreading, legumes two-seeded. *Engl. Bot. t.* 1049. *Engl. Fl. v. iii. p.* 299.

Sandy sea-shores, rare. On the coasts of Norfolk and Suffolk. Anglesea, *Mr. W. Wilson*. *Fl.* June, July. ⊙.—*Stems* 3—4 inches long. Remarkable for its dense sessile heads of inconspicuous *flowers*, and for its thin, delicate, scarcely striated *calyx*.

H. 13. T. *striátum*, Linn. (*soft knotted Trefoil*); downy, heads terminal and axillary ovate subsolitary sessile, calyx striated very rigid hairy with unequal straight small setaceous teeth, leaflets obcordate nearly entire, stems ascending. *Engl. Bot. t.* 1843. *Hook. Scot. i. p.* 219. *Engl. Fl. v. iii. p.* 307.

Dry pastures and fields, frequent. *Fl.* June. ⊙.—From 4 to 8 or 10 inches long, more or less procumbent or reclined, pubescent. *Flowers* small, purplish red. *Cal.* deeply furrowed, oval, a little swollen, with 5, almost setaceous, straight, not recurved teeth.

*** *Cal. remarkably inflated after flowering and arched above. Standard of the Corolla deciduous.*

H. 14. T. *fragíferum*, Linn. (*Strawberry-headed Trefoil*); heads globose upon long lateral stalks, calyx after flowering inflated membranaceous reticulated downy two of the teeth bent down, stem creeping, leaflets obcordate serrated. *Engl. Bot. t.* 1050. *Hook. Scot. i. p.* 219. *Engl. Fl. v. iii. p.* 308.

Meadows and pastures. *Fl.* July—Aug. ♃.—*Flowers* very small, purplish red. The *heads* of *flowers*, an inch in diameter, are, often, more or less coloured, so as not inaptly to resemble a Strawberry. Mouth of the *calyx*, as in the following species, singularly contracted when enclosing the fruit.

15. T. *resupinátum*, Linn. (*reversed Trefoil*); heads hemisphæ-

rical, at length globose on stalks at first only about as long as the petiole, corollas resupinate, calyx after flowering membranaceous reticulated inflated hairy acute, two of the teeth longer patent, leaflets obovate, stem prostrate. *De Cand. Prodr. v. ii. p.* 202. *Sturm, Deutschl. Fl. cum Ic.*

Meadows near Bristol; *Mr. Drummond. Fl.* July. ⊙.—This is a plant little likely to be an outcast of gardens, and the situation in which Mr. Drummond found it, he describes as, to all appearance, truly a natural one.

**** *Standard of the corolla persistent, deflexed, dry, enveloping the fruit. (Flowers yellow.)*

H. 16. T. *procúmbens*, Linn. (*Hop Trefoil*); heads broadly oval many-flowered dense, standard at length deflexed furrowed, leaves stalked, leaflets obcordate, central one stalked.

α. stems procumbent, peduncles longer than the leaves. *T. procumbens, Linn. Engl. Bot. t.* 945. *Hook. Scot. i. p.* 219. *Engl. Fl. v. iii. p.* 309.

β. stems erect, peduncles shorter than the leaves. *Ser. in De Cand. Prod. v. ii. p.* 205. *T. campestre, Schreb. in Sturm's Deutschl. Fl. cum Ic.*

Dry pastures and borders of fields, frequent.—*β*. In sandy soil, *Mr. W. Wilson.* Near Edinburgh, *Dr. Boott. Fl.* June, July. ⊙.—This is well distinguished from the following by the large, dense, hop-like *heads* of *flowers*, and the *standard* striated when old. It is more difficult to distinguish the erect var. *β*. from the true *T. agrarium* of Linn. That plant is however always larger and stronger in all its parts, and has oblong *leaflets* which are nearly sessile, and greatly shorter than the *peduncles*.

H. 17. T. *filifórme*, Linn. (*lesser yellow Trefoil*); heads of few lax somewhat racemose flowers, standard with its sides at length deflexed nearly even, leaves almost sessile, leaflets obcordate, central one mostly on a short stalk, stems procumbent.

α. *major*; larger, heads of several flowers, peduncles much longer than the leaves. *T. filiforme, Sturm. Deutschl. Fl. cum Ic. and foreign authors. T. minus, Relh.—Engl. Bot. t.* 1256. *Hook. Scot. i. p.* 220. *Engl. Fl. v. iii. p.* 310.

β. *microphyllum*, (*Ser. in De Cand. Prodr. v. ii. p.* 206.); smaller, heads of very few distant flowers, peduncles frequently not exceeding the leaves. *T. lupulinum, minimum; Dill. in Raii Syn. p.* 331. *t.* 14. *f.* 4. *T. filiforme, Engl. Bot. t.* 1257. *Hook. Scot. i. p.* 220. *Engl. Fl. v. iii. p.* 310.

Dry pastures, and road-sides, frequent. *Fl.* June, July. ⊙.—A careful examination of numerous specimens of this Trefoil, from various parts of England and from the Continent, have satisfied me that Dillenius' plant in *Ray, t.* 14. *f.* 4, is only a starved state of the commoner appearance of *T. filiforme*, and the same as the var. *microphyllum* of Seringe in De Candolle. The *Engl. Bot. T. filiforme* is a little more luxuriant, and all the intermediate states may be seen between it and the acknowledged *filiforme* of continental writers. In all, the *flowers* are pedicellated, and in the few-flowered varieties the *pedicels* are more evident, and thus appear more truly racemose.

21. Lótus. *Linn.* Bird's-foot-trefoil.

Legume cylindrical, somewhat spongy within, and imperfectly many-celled. *Keel* acuminated.—Name; supposed to be one of the three kinds (the *herbaceous*) of the Λωτος of the Greeks.

H. 1. L. *corniculatus*, Linn. (*common Bird's-foot trefoil*); heads depressed umbellate 8—10 flowered, stems decumbent, leaflets obovate, peduncles very long, claw of the standard inflated above.

α. *vulgaris;* every where glabrous, or nearly so. *L. corniculatus, Linn. Engl. Bot. t.* 2090. *Hook. Scot. i. p.* 220. *Engl. Fl. v. iii. p.* 312.

β. *villosus;* stem, leaves, and calyx clothed with very long spreading hairs. *L. corniculatus,* γ. *De Cand. Prod. v. ii. p.* 214.

Pastures every where, abundant.—β. rare. Higham, Kent, *Rev. Prof. Henslow. Fl.* July, Aug. ♃.—The var. β. is a very remarkable one; the *villosus* of Thuillier's Flora of Paris, and at least as deserving of being considered a distinct species as the two following.

H. 2. L. *ténuis*, Waldst. et Kit. (*slender Bird's-foot trefoil*); heads depressed umbellate 6—10-flowered, stems prostrate slender, leaflets lanceolate, peduncles very long, claw of the standard inflated above. *Borr. et Hook. in Engl. Bot. t.* 2615.—*L. corniculatus, var. tenuifolius, Poll.—De Cand.—L. decumbens, Forst. Tonb.* 86. *Engl. Fl. v. iii. p.* 2615.—*L. depressus et humifusus, Willd.*

Dry and waste places in many parts of England and Scotland. *Fl.* July. ♃.—I am really unable to point out any marks by which this may be known from the preceding, except its more slender and straggling habit, and narrower foliage. It is certainly by no means an uncommon plant.

H. 3. L. *májor*, Scop. (*greater Bird's-foot trefoil*); heads depressed umbellate 8—10-flowered, stems nearly erect tubular, leaflets obovate, peduncles very long, claw of the standard narrow. *Engl. Bot. t.* 2091. *Engl. Fl. v. iii. p.* 313.—*L. corniculatus,* γ. *Sm. Fl. Br. p.* 794. (β.) *Hook. Scot. i. p.* 230.

Sides of ditches and moist bushy places, by no means unfrequent. *Fl.* July, Aug. ♃.—The place of growth of this plant, in moister situations than *L. corniculatus*, consequently inducing a greater development of every part, is I think, in itself, almost sufficient to account for those trifling differences which are said to distinguish it from that well-known species. The difference of breadth of the filaments in the two, mentioned by Smith, Mr. Wilson finds not to be constant. *L. corniculatus*, he adds, "seems to differ chiefly in the vaulted or gibbous appearance of the upper part of the *claw* of the *standard*, which raises up the two teeth of the *calyx* above." But is this mark constant? Smith says the *claw* of the *standard* of our present plant, "though linear, is vaulted."

4. L. *angustíssimus*, Linn. (*slender Bird's-foot trefoil*); villous,

flowers solitary or in pairs, their peduncle about twice as long as the leaves, leaflets ovato-lanceolate, calyx-teeth very long, stems procumbent, legumes very slender. *Engl. Fl. v. iii. p.* 315.—*L. diffusus*, *Engl. Bot. t.* 925.

South of England, very rare. On the rocky beach at Hastings, Sussex: at Kingsteignton and Bishopsteignton, Devon. Strand, near Passage, Ireland, *Mr. Drummond.* The St. Vincent's Rocks station, mentioned by Smith, is considered to belong to *L. tenuis.*—*Fl.* May, June. ⊙.—*Flowers* much smaller and general aspect very different from any of the preceding.

22. Medicágo. *Linn.* Medick.

Legume falcate or spirally twisted.—Name: the *μηδικη*, of the Greeks, so called because it was introduced into Greece by the Medes.

1. M. *falcáta*, Linn. (*yellow Sickle Medick*); decumbent nearly glabrous, leaflets obovato-oblong toothed, peduncles racemed, legumes falcate and very slightly twisted glabrous. *Engl. Bot. t.* 1749. *Hook. Scot. i. p.* 220. *Engl. Fl. v. iii. p.* 317.

Pastures and borders of fields, but scarcely indigenous. *Fl.* June, July. ♃.—*Flowers* yellow.

H. 2. M. *satíva*, Linn. (*purple Medick or Lucerne*); erect glabrous, leaflets obovato-oblong toothed, peduncles racemed, legumes loosely spirally twisted. *Engl. Bot. t.* 1749. *Engl. Fl. v. iii. p.* 317.

Dry gravelly banks and pastures, not wild. *Fl.* June, July. ♃.—This has purple *flowers* and a spirally-twisted *pod.* In habit it very nearly resembles the preceding and has been suspected to be only a cultivated state of it. In habit, the two differ remarkably from the following species.

H. 3. M. *lupulína*, Linn. (*black Medick or Nonsuch*); procumbent, leaflets obovato-cuneate, stipules nearly entire, flowers capitato-spicate, legumes kidney-shaped 1-seeded. *Engl. Bot. t.* 971. *Hook. Scot. i. p.* 220. *Engl. Fl. v. iii. p.* 318.

Abundant in waste ground and cultivated fields. *Fl.* May—Aug. ⊙.—A valuable plant in Agriculture, very similar in habit to *Trifolium filiforme. Flowers* crowded, small, yellow. *Legumes* small, rugged, of a black colour when ripe.

H. 4. M. *maculáta*, Sibth. (*spotted Medick*); procumbent, leaflets obcordate, stipules toothed, peduncles 3—5-flowered, legumes compactly spiral compressed, the spires furrowed at the edge and fringed with a double row of long spreading curved spines. *Engl. Fl. v. iii. p.* 319.—*M. polymorpha*, *Engl. Bot. t.* 1616.

Gravelly pastures in the middle and south of England. Ormeshead, N. Wales, *Mr. W. Wilson.* *Fl.* May, June. ⊙.—*Leaflets* marked with a purple spot in the centre.

5. M. ~~*runcin*~~muric*áta*, All. (*flat-toothed Medick*); procumbent, leaf-

lets obcordate downy, stipules toothed, peduncles 1—3 flowered, legumes compactly spiral subglobose, the spires keeled at the margin and fringed with a close double row of short subulate curved spines. *Engl. Fl. v. iii. p.* 320.—*M. polymorpha, muricata. Linn.* ζ.—(γ.) *Sm. Fl. Br.*

On the sea-bank, Orford, Suffolk, *Ray. Fl.* June, July. ♃.—*Leaves* hoary with fine pubescence.—In common with Sir Jas. E. Smith, I have seen no native plants of this, and have drawn up my character from a south of France specimen given me by Mr. Bentham, who has studied this genus with great attention, and from whom a Monograph may be expected.

H. 6. M. *mínima*, Linn. (*little Bur Medick*); procumbent, leaflets obcordate downy, stipules nearly entire, peduncles 1—5 flowered, legumes compactly spiral subglobose, the spires narrow keeled at the margin with a compact double row of uncinate prickles. *Engl. Fl. v. iii. p.* 321.

β. stems and leaves hoary. *M. minima, β. canescens. De Cand. Prodr. v. ii. p.* 178.

Sandy fields and waste places, rare. Narburgh, Norfolk, and near Newmarket. Between Sandwich and Pegwell, Kent; *Mr. G. E. Smith.* Landguard Fort, Suffolk, and, β. Pegwell Bay, Isle of Thanet, *Rev. Prof. Henslow. Fl.* June, July. ⊙.—It is possible that Ray's plant, taken for *M. muricata* (see preceding species) may be the present, which Prof. Henslow finds upon the same coast. The plant of the latter gentleman precisely accords with specimens from Mr. Bentham of the true *M. minima.*

H. 7. M. *denticuláta*, Willd. (*reticulated Medick*); nearly glabrous, leaflets obcordate, stipules laciniated, peduncles 2—5 flowered, legumes broad loosely spiral and flat with 1—3 convolutions reticulated, the margin thin keeled with a double compact row of subulate curved prickles. *G. E. Smith in Cat. of Pl. of S. Kent.* H. *p.* 43. *t.* 1. *f.* 4.—*M. maculata, β. Sm. Engl. Fl. v. iii. p.* 319.

Upon exposed sandy banks on the coast of Kent, *Ray; Mr. G. E. Smith.* Near Weymouth, *Mr. Lightfoot.* Cley, Norfolk, *Rev. Mr. Bryant. Fl.* April—June. ⊙.—Mr. G. E. Smith has well distinguished the present species in the little work just mentioned. Its *legumes* are very beautiful and quite unlike any of the preceding. Mr. Smith speaks of 2 vars., one with long and the other with shorter spines; which, in all probability, correspond with the α. and β. of Mr. Bentham in his *Cat. of Pl. of the Pyr. and Lang. p.* 103.—I am indebted for authentic British specimens to Mr. Winterbottom.

CLASS XVIII. POLYADELPHIA. 1 – 11.

Filaments combined in more than two sets.

ORD. I. POLYANDRIA. *Many stamens.*

1. HYPÉRICUM. *Linn.* St. John's-wort.

Cal. 5-partite, inferior. *Pet.* 5. *Filaments* united at the base into 3 or 5 sets. *Capsule* many-seeded.—*Nat. Ord.* HYPERICINEÆ. *Juss.*—Name; the ὑπερικον, of Dioscorides.

* *Styles* 5.

1. H. *calycínum*, Linn. (*large-flowered St. John's-wort*); styles 5, flowers solitary, segments of the calyx unequal obovate obtuse, leaves oblong, stem shrubby branched square. *Engl. Bot. t.* 2017. *Hook. Scot. i. p.* 221. *Engl. Fl. v. iii. p.* 323. dedicated to St. John the Baptist.

Bushy places. Near Cork, Ireland. Largs; and Balmacarra, Scotland, (*Dr. Maclachlan*,) but I fear not truly wild. Commonly cultivated in shrubberies on account of its beauty. *Fl.* July, Sept. ♄.—*Flowers* very large, yellow, as in all the Genus. Sets of *stamens* 5.

** *Styles* 3. *Cal. segments entire at the margins.*

H. 2. H. +*Androsǽmum*, Linn. (*Tutsan*); styles 3, capsule pulpy, stem shrubby compressed, calyx-leaflets unequal, leaves ovate sessile. *Engl. Bot. t.* 1225. *Hook. Scot. i. p.* 221. *Engl. Fl. v. iii. p.* 324.—*Androsæmum officinale*, *All.*—*Lindl.* + Man's blood - alluding t the juice - formerly applied wounds.

Hedges and shrubby places; rare in England, except in Norfolk and at Asheridge, Herts. Not unfrequent in Ireland, and on the west of Scotland. *Fl.* July. ♄.—Two feet high. *Leaves* large. *Cymes* of rather large *flowers*, terminal. *Berry* black.

H. 3. H. *quadrángulum*, Linn. (*square-stalked St. John's-wort*); styles 3, stem herbaceous 4-angled somewhat branched, leaves ovate with pellucid dots, calyx-leaves lanceolate. *Engl. Bot. t.* 370. *Hook. Scot. i. p.* 221. *Engl. Fl. v. iii. p.* 324.

Moist pastures, sides of ditches and rivulets. *Fl.* July. ♃.—One foot to 2 feet high. *Panicles* terminal.

H. 4. H. *perforátum*, Linn. (*common perforated St. John's-wort*); styles 3, stem two-edged, leaves elliptic-oblong obtuse with pellucid dots, segments of the calyx lanceolate. *Engl. Bot. t.* 295. *Hook. Scot. i. p.* 221. *Engl. Fl. v. iii. p.* 325.

Woods, thickets, hedges, &c. abundant. *Fl.* July. ♃.—One foot to 2 feet or more high, branched. There are minute black dots on the tips of the *cal.*, *cor.*, and often on the *leaves*. This plant is variously commemorated by Physicians and Poets, as "Balm of the Warrior's wound," in allusion to its healing properties, while its profusion is noticed in

> "*Hypericum*, all bloom, so thick a swarm
> "Of flowers, like flies, clothing its slender rods
> "That scarce a leaf appears."

H. 5. H. *dúbium*, Linn. (*imperforate St. John's-wort*); styles 3, stem obsoletely quadrangular, leaves elliptic-ovate obtuse destitute of pellucid dots, segments of the calyx elliptical. *Engl. Bot. t.* 296. *Hook. Scot. i. p.* 221. *Engl. Fl. v. iii. p.* 326.

Rather mountainous woods in various places, but no where in great plenty. *Fl.* July, Aug. ♃.—Similar in many respects to the last; for which, perhaps, it is not unfrequently mistaken. *Corolla* often marked with small black dots.

H. 6. H. *humifúsum*, Linn. (*trailing St. John's-wort*); styles 3, flowers terminal subcymose, stem compressed prostrate, leaves oblong obtuse glabrous. *Engl. Bot. t.* 1226. *Hook. Scot. i. p.* 222. *Engl. Fl. v. iii. p.* 326.

Gravelly, heathy and boggy pastures, stone walls, &c. in many places. *Fl.* July. ♃.—*Stem* slender, about a span long. *Cor.* with black dots, as well as the *calyx*, on which they are frequently seen near the edge, but not, in my specimens, so distinctly as to justify the plant being placed in the next division.

*** *Styles* 3. *Margins of the calycine segments with glandular serratures.*

7. H. *montánum*, Linn. (*Mountain St. John's-wort*); styles 3, flowers paniculato-corymbose, calyx with glandular serratures, stem erect rounded and as well as the ovate leaves glabrous. *Engl. Bot. t.* 371. *Hook. Scot. i. p.* 222. *Engl. Fl. v. iii. p.* 327.

Bushy hills, especially in a chalky or gravelly soil. *Fl.* July. ♃.—One foot and a half to two feet high. *Leaves* rather large, more or less perforated, distant, especially above; their margins having black glandular dots; those of the *bracteas* and *calyx* beautifully serrated with them. *Flowers* rather compact.

8. H. *barbátum*, Jacq. (*bearded St. John's-wort*); styles 3, corymbs terminal, calyx fringed with long stalked glands, stem erect rounded, leaves ovate with (black) scattered dots beneath. *Engl. Bot. t.* 1986. *Hook. Scot. i. p.* 222. *Engl. Fl. v. iii. p.* 327.

Side of a hedge near Aberdalgy in Strathearn, Perthshire; *Mr. G. Don. Fl.* Sept. Oct. ♃.—One foot or more high. Very distinct in the long glandular hairs of its *calyx*. The *petals*, too, are often toothed at the extremity.

H. 9. H. *hirsútum*, Linn. (*hairy St. John's-wort*); styles 3, calyx with (black) glandular serratures, stem erect rounded pubescent, leaves ovate slightly downy beneath. *Engl. Bot. t.* 116. *Hook. Scot. i. p.* 222. *Engl. Fl. v. iii. p.* 328.

Woods and thickets, especially in a chalky soil. *Fl.* July. ♃.—Two feet high. *Leaves* rather large, more or less downy, especially beneath.

10. H. *púlchrum*, Linn. (*small upright St. John's-wort*); styles 3, calyx with (black) glandular serratures, stem erect, leaves cordate amplexicaul glabrous. *Engl. Bot. t.* 1227. *Hook. Scot. i. p.* 222. *Engl. Fl. v. iii. p.* 329.

Dry woods and heaths, frequent. *Fl.* July. ♃.—One foot to 2 feet high, slender, erect, rigid, branched. *Flowers* beautiful, in loose panicles, yellow, tipped, before expansion, with red. *Anthers* red.

11. H. *elódes*, Linn. (*Marsh St. John's-wort*); styles 3, calyx with (reddish) glandular serratures glabrous, leaves roundish shaggy, stem rounded creeping, panicle of few flowers. *Engl. Bot. t.* 109. *Hook. Scot. i. p.* 223. *Engl. Fl. v. iii. p.* 330.

Spongy bogs, not unfrequent. *Fl.* July, Aug. ♃.—A span long. *Flowers* few, panicled, terminal, pale yellow.

CLASS XIX. SYNGENESIA.*

Anthers united into a tube. Flowers compound.—(*Nat. Ord.* COMPOSITÆ. *Juss.*)

ORD. I. ÆQUALIS. *All the florets perfect.* Gen. 1—26.

* *All the Corollas ligulate or strap-shaped.* (CICHORACEÆ. *Juss.*)—Gen. 1—15.

1. TRAGOPÓGON. *Linn.* Goat's-beard.

Involucre simple, of many scales. *Receptacle* naked. *Pappus* feathery, stalked. *Fruit* longitudinally striated.—Name; τραγος, a *goat*, and πωγων, a *beard*; from the beautifully bearded fruit.

1. T. *praténsis*, Linn. (*yellow Goat's-beard*); involucre about as long as the corollas, leaves undivided glabrous acuminated channelled, peduncles cylindrical. *Engl. Bot. t.* 434. *Hook. Scot. i. p.* 226. *Engl. Fl. v. iii. p.* 337.

Meadows and pastures; rare in Scotland. Ball's Bridge, Ireland; *Mr. J. T. Mackay. Fl.* June. ♂.—One foot to 2 feet high. *Flowers* yellow; head of *fruit* large. *Pappus* very feathery, elevated on long stalks.

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* This is an extensive and most natural class, corresponding with the COMPOSITÆ of the Nat. Arrangements. In all the species, the *flowerstalk* is enlarged at the summit into a *receptacle*, which bears a great number of distinct, but closely placed, small *flowers* or *florets*, surrounded by a many-leaved *involucre*, so that the whole looks like one flower. Each *floret* has an inferior *germen*, the upper part frequently expanding into a hairy or feathery *calyx* called a *pappus*, and becoming a 1-seeded *pericarp* or *Achenium*. The *corolla* is of one *petal*, tubular, or ligulate. *Stamens* 5. *Style* single. *Stigma* bifid.

2. T. *porrifólius*, Linn. (*purple Goat's-beard*); involucre much longer than the corollas, leaves undivided straight, peduncles thickened upwards. *Engl. Bot. t.* 638. *Hook. Scot. i. p.* 226. *Engl. Fl. v. iii. p.* 338.

Moist meadows in several parts of England; but very local. About Glasgow. *Fl.* May, June. ♃.—Three to 4 feet high. *Flowers* large, purple, closing before noon, or in rainy weather. The *root* was formerly cultivated for culinary purposes.

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2. Helmínthia. *Juss.* Ox-tongue.

Involucre double; inner of 8 close scales, outer of 4 large, lax, leafy ones. *Receptacle* naked. *Pappus* feathery, stalked. *Fruit* transversely striated.—Name; ἑλμινς, ἑλμινθος, a *worm*, and θηκη, a *case;* from the form of the fruit.

1. H. *echioídes*, Gaertn. (*bristly Ox-tongue*).—*Picris echioides, Linn.*—*Engl. Bot. t.* 972. *Engl. Fl. v. iii. p.* 339.

Borders of fields, especially in a clayey soil. Not found in Scotland. About Dublin, *Mr. J. T. Mackay*. *Fl.* June, July. ♃.—2—3 feet high, stout, hispid with numerous rigid hairs, springing from tubercles. Lower *leaves* lanceolate; upper ones cordate, amplexicaul. *Flowers* small, yellow. Outer *involucre* with heart-shaped scales, large.

3. Pícris. *Linn.* Picris.

Involucre double; inner of many compact, upright, equal scales, outer of several lax, small, linear ones. *Receptacle* naked. *Pappus* sessile, slightly feathery. *Fruit* transversely striated.—Name; πικρος, *bitter*, as are many of this tribe.

1. P. *hieracioídes*, Linn. (*Hawk-weed Picris*); stem rough with hooked bristles, leaves lanceolate rough toothed, flowers corymbose, peduncles with many bracteas. *Engl. Bot. t.* 196. *Hook. Scot. i. p.* 226. *Engl. Fl. v. iii. p.* 339.

Road-sides and borders of fields, frequent. *Fl.* July, Aug. ♂.—*Stems* 2—3 feet high. *Flowers* yellow.

4. Sónchus. *Linn.* Sow-Thistle.

Involucre imbricated with scales, swelling at the base. *Receptacle* naked. *Pappus* simple, sessile.—Name; σονχος in Greek: from σομφος, *soft*, in allusion to the soft nature of the stems.

1. S. *alpínus*, Linn. (*blue alpine Sow-thistle*); flower-stalks bracteas and involucre glanduloso-hispid racemose, stems glabrous below, leaves lyrate arrow-shaped at the base glabrous, terminal lobe very large deltoideo-hastate.—*S. cæruleus*, "*Camer. Epist.* 281." *Engl. Bot. t.* 2425. *Hook. Scot. i. p.* 226. *Engl. Fl. v. iii. p.* 341.

Rocky places near rivulets, in the mountains of Clova. *Fl.* July, Aug. ♃.—I cannot but agree with Wahlenberg in considering this to be

* T. major. Appen. 21.

the same as the true *alpinus* of Linn. I have gathered the plant at the head of the White-water in the Clova mountains, and on a comparison of those specimens with others of *S. alpinus*, for which I am indebted to Sir James E. Smith himself, I find them to be identical. What the *S. alpinus* of "*Smith's Icones*" may be, I am unable to say. Though stated to be common in Lapland, and eaten by the natives, Wahlenberg never saw any thing resembling it. *Plant* 3—4 feet high. *Flowers* blue.

H. 2. S. *palústris*, Linn. (*tall Marsh Sow-thistle*); flower-stalks corymbose and involucres glanduloso-hispid, leaves runcinato-pinnatifid with few segments arrow-shaped at the base denticulate, upper ones simply sagittate. *Engl. Bot. t.* 933. *Engl. Fl. v. iii. p.* 341.

Marshy places, rare: Isle of Ely. About Greenwich and Blackwall.—Wouldham, Kent, *Rev. Prof. Henslow*. *Fl.* July, Aug. ♃.—6—8 feet high. *Flowers* numerous, large, yellow.

H. 3. S. *arvénsis*, Linn. (*corn Sow-thistle*); flower-stalks corymbose and involucre glandulose-hispid, leaves denticulate cordate at the base oblongo-lanceolate, lower ones sinuato-runcinate. *Engl. Bot. t.* 674. *Hook. Scot. i. p.* 226. *Engl. Fl. v. iii. p.* 342.

Corn-fields, frequent. *Fl.* Aug. ♃.—*Stems* 3—4 feet high. *Flowers* very large, yellow.

H. 4. S. *oleráceus*, Linn. (*common Sow-thistle*); flower-stalks downy subumbellate, involucre glabrous, leaves lyrato-runcinate, upper ones lanceolate sagittato-amplexicaul at the base, all dentato-ciliate. *Engl. Bot. t.* 843. *Hook. Scot. i. p.* 227. *Engl. Fl. v. iii. p.* 343.

Waste places and cultivated ground, common. *Fl.* June, Aug. ⊙.—Two—3 feet high. *Flowers* small, yellow. *Involucre* conical when in seed.

5. Lactúca. *Linn.* Lettuce.

Involucre imbricated, cylindrical, its scales with a membranous margin. *Receptacle* naked. *Pappus* simple, stipitate.—Named from *Lac, milk*, which flows from this and many plants of this tribe, when bruised.

H. 1. L. *virósa*, Linn. (*strong-scented Lettuce*); leaves patent oblong toothed two-eared and amplexicaul at the base, their keel prickly, flowers panicled. *Engl. Bot. t.* 1957. *Hook. Scot. i. p.* 227. *Engl. Fl. v. iii. p.* 345.

Banks and way-sides, especially in a chalky soil. Rare in Scotland: about Edinburgh and Dunkeld. *Fl.* Aug. ♂.—*Stems* 3—4 feet high, erect, prickly, with distant *leaves*. *Root-leaves* obovate, numerous.—The plant abounds with a milky and narcotic juice, which has been considered by some as a gentle and safe opiate. *Flowers* small, yellow.

2. L. *Scariόla*, Linn. (*prickly Lettuce*); leaves nearly upright

lanceolato-sagittate sinuated and ciliato-dentate, the keel prickly, panicle leafy. *Engl. Bot. t.* 268. *Engl. Fl. v. iii. p.* 346.

Waste ground in Cambridgeshire. *Fl.* Aug. ♃.—Of milder quality than the last and paler colour, with more upright *branches* and *leaves*.

3. L. *salígna*, Linn. (*least Lettuce*); root-leaves lanceolate with few teeth, cauline ones linear-lanceolate entire sagittate, flowers lateral with small floral leaves. *Engl. Bot. t.* 707. *Engl. Fl. v. iii. p.* 347.

Chalky waste ground, near salt-marshes in the south-east of England. *Fl.* Aug. ♂.—Whole *plant* slender, branches twiggy: the small *flowers* may be said to be almost spicate.

6. PRENÁNTHES. *Linn.* Wall-Lettuce.

Involucre cylindrical, its scales equal, with smaller ones at the base. *Florets* few. *Receptacle* naked. *Pappus* simple, sessile.—Name, from πρηνης, *drooping*, and ανθος, a *flower*.

H. 1. P. *murális*, Linn. (*Ivy-leaved Wall-lettuce*); florets 5, leaves lyrato-pinnatifid and toothed the terminal lobe angled, panicle with divaricated branches. *Engl. Bot. t.* 457. *Hook. Scot. i. p.* 227. *Engl. Fl. v. iii. p.* 348.—*Chondrilla, Lam.*

On old walls and in woods. *Fl.* July. ♃.—*Stem* 2 feet high, panicled above. *Flowers* small, yellow; *fruit* with an elongated narrow neck, not really stipitate.

2. P. *hieráciifolia*, Willd. (*Hawkweed-leaved Wall-lettuce*); leaves downy toothed, radical ones oblongo-obovate, the rest sagittato-amplexicaul, panicle corymbose spreading.—*Crepis pulchra, Linn.*—*Engl. Bot. t.* 2325. *Hook. Scot. i. p.* 233. *Engl. Fl. v. iii. p.* 371.

Crumbling rocks on the hill of Turin, near Forfar, Scotland. *Fl.* June—Sept. ⊙.—*Root-leaves* tapering into a footstalk; *cauline* ones very few, small, clasping the stem with their toothed bases.

7. LEÓNTODON. *Linn.* Dandelion.

Involucre imbricated with scales, of which the outermost are frequently lax and flaccid. *Receptacle* naked. *Pappus* stipitate, simple.—Name; λεων, a *Lion*, and οδȣς, a *tooth*, from the tooth-like margins of the leaves.

1. L. *Taráxacum*, Linn. (*common Dandelion*); outer scales of the involucre reflexed, leaves runcinate glabrous toothed. *Engl. Bot. t.* 510. *Hook. Scot. i. p.* 227. *Engl. Fl. v. iii. p.* 349.

Meadows and pastures, every where. *Fl.* all summer. ♃.—*Leaves* all radical, their segments more or less deep. *Scape* with a single, large *flower*.

2. L. *palústre*, Sm. (*Marsh Dandelion*); outer scales of the involucre erect appressed, leaves sinuato-dentate nearly glabrous. *Engl. Bot. t.* 553. *Hook. Scot. i. p.* 227. *Engl. Fl. v. iii. p.* 350.

Wet pastures: Cambridgeshire and Norfolk. Frequent in Scotland upon the wet moors, where it may be seen gradually passing into *L. Taraxacum.* *Fl.* all summer. ♃.—It seems, however, according to Sprengel, to have been taken up, as a species, by many Botanists and under different names.

8. Apárgia. *Schreb.* Hawkbit.

Involucre imbricated, the innermost scales equal, outer ones smaller. *Receptacle* naked, pitted. *Pappus* feathery, sessile.—Name, of uncertain origin. *Απαργια*, was applied to some plant of this tribe.

H. 1. A. *híspida,* Willd. (*rough Hawkbit*); scape single-flowered, leaves runcinate hispid with forked hairs, flowers drooping in bud, "florets hairy at their orifice glandulose at the tip," involucre hairy. *Hook. Scot. i. p.* 227. *Engl. Fl. v. iii. p.* 351.—*Hedypnois hispida, Huds.*—*Engl. Bot. t.* 554.—*Leontodon hispidum, Linn.*

Meadows, pastures and gravelly heaths, frequent. *Fl.* June, July. ♃.

2. A. *Taráxaci,* Willd. (*Dandelion Hawkbit*); scapes thickened above and hairy mostly single-flowered, leaves runcinate glabrous, involucre hairy. *Hook. Scot. p.* 228. *Engl. Fl. v. iii. p.* 352.—*Hedypnois Taraxaci, Engl. Bot. t.* 1109.—*Hieracium Taraxaci, Linn.*

Mountains of Wales, Scotland and Ireland. *Fl.* Aug. ♃.—Remarkable for its *scape* being thickened upwards, and there, as in the *involucre,* clothed with black hairs. *Flowers* rather large, yellow.

H. 3. A. *autumnális,* Willd. (*autumnal Hawkweed*); scape branched scaly upwards, leaves lanceolate toothed or pinnatifid nearly glabrous, peduncles swollen beneath the somewhat downy involucre. *Hook. Scot. i. p.* 228. *Engl. Fl. v. iii. p.* 353.—*Hedypnois autumnalis, Engl. Bot. t.* 830.—*Leontodon autumnale, Linn.*

Meadows and pastures, frequent. *Fl.* Aug. ♃.—*Involucre* cylindrical, and tapering gradually into the *pedicel,* which is scaly. *Flowers* moderately large, yellow.

9. Thríncia. *Roth.* Thrincia.

Involucre nearly simple, multipartite, with a few small scales at the base. *Receptacle* naked, pitted. *Pappus* of the florets of the *circumference* scaly, of those of the *centre* feathery, sessile.—Name; ϑριγκος, a *feather,* in allusion to the feathery pappus.

1. T. *hírta,* Roth, (*hairy Thrincia*); leaves lanceolate subsinuato-dentate somewhat hispid with frequently forked hairs, scapes single-flowered ascending glabrous as well as the involucre. *Hook. Fl. Lond. N. S. cum Ic.*—*Apargia hirta, Hoffm.*—*Engl. Fl. v. iii. p.* 352. *Hook. Scot. i. p.* 228.—*Hedypnois hirta, Engl. Bot. t.* 555.—*Leontodon hirtum, Linn.*

Gravelly pastures and moors. *Fl.* July, Aug. ♃.—In small, starved specimens, the *leaves* are often runcinate. The outer *pericarps*, which have scales for a *pappus*, are often abortive and smooth; the inner ones are most beautifully striated and marked with raised dots.

10. HIERÁCIUM. *Linn.* Hawk-weed. Note 7.

Involucre imbricated, ovate. *Receptacle* nearly naked, dotted. *Pappus* simple, sessile.—Name; ἱεραξ, a *hawk;* because birds of prey were supposed to employ this plant to strengthen their powers of vision.

* *Scape leafless or rarely with one leaf, single-flowered.*

1. H. *alpínum,* Linn. (*alpine single-flowered Hawk-weed*); scape single-flowered nearly leafless hairy as well as the oblongo-lanceolate almost entire leaves, involucre thickly clothed with long silky hairs. *Engl. Bot. t.* 1110. *Hook. Scot. p.* 228. *Engl. Fl. v. iii. p.* 355.

Elevated rocky mountains. Snowdon, *Mr. H. Lhwyd.* Near Llyny Cron, N. Wales; *Mr. W. Wilson.* Highland mountains of Scotland. *Fl.* July, Aug. ♃.—Four to 6 inches high. *Leaves* with numerous, whitish hairs, especially at the base, which tapers into a petiole. *Hairs,* in the upper part of the *scape,* black at the base, and often mixed with minute, black, glandulose ones. *Involucre* thicky clothed all over with dingy-coloured or fulvous, long, silky hairs, which admirably distinguish this species. *Flowers* always solitary, large, full yellow.

2. H. *Halléri,* Vill. (*Hallerian Hawkweed*); scape 1-flowered with one or rarely 2 leaves hairy as well as the oblongo-spathulate distinctly toothed radical ones, involucre with long (fulvous) silky hairs. *Hook. Scot. i. p.* 229. (*not Fl. Lond. N. S. t.* 215.)—*Engl. Fl. v. iv. p.* 271.—*H. hybridum, Vill. Delph. t.* 26.—*H. pumilum and Halleri? Willd.*—*H. villosum, Engl. Bot. t.* 2379, (surely, and correct for a cultivated specimen; but not of foreign authors, nor of *Jacq. Austr. t.* 87.)

Highland mountains of Scotland. Ben More in Glen Dochart, Ben Lawers, and on the Clova mountains. *Fl.* Aug. ♃.—Having received cultivated specimens of my *H. Halleri* of Fl. Scotica from Mr. Drummond, I can scarcely hesitate in referring the Engl. Bot. *villosum* to it, for that is a most faithful representation of the plant, as altered by culture; nor do I hesitate in pronouncing my plant to be the true *Halleri* of the French and German Botanists, from whom I possess numerous specimens. But then I have as little hesitation in saying that the plant is simply a luxuriant state of *H. alpinum;* its general habit, its hairy *leaves,* shaggy *involucre* and large solitary *flowers* proclaim it to be such. I have been led into an error, partly by Sir James Smith's remark, that *H. Halleri* was a caulescent species, which it cannot in reality be considered, and partly by a bad figure in Sturm's Deutschland Flora:—and in the New Series of Fl. Lond., I have described a caulescent plant as the true *Halleri:* a species which I now refer to the *H. pulmonarium* of Engl. Bot. or, as I there remarked, to a state of *H. mu-*

rorum. Those who have most endeavoured to unravel the difficulties attending the study of this highly perplexing genus, will be least disposed to judge severely such mistakes.—The real *H. villosum* is a decidedly caulescent plant, bearing many large *leaves.* Our present one is branched only when in cultivation and near the base.

H. 3. H. *Pilosélla*, Linn. (*common Mouse-ear Hawkweed*); scape one-flowered leafless, leaves entire ellipticolanceolate hairy downy beneath, scions creeping. *Engl. Bot. t.* 1093. *Hook. Scot. i. p.* 229. *Engl. Fl. v. iii. p.* 356.

Banks and dry pastures, frequent. *Fl.* May—July.—Distinguishable at all times, by its creeping *scions.* *Flowers* of a pale, lemon-yellow.

** *Scape leafless or rarely with* 1 *leaf, many-flowered.*

4. H. *dúbium*, Linn. (*branching Mouse-ear Hawkweed*); scape many-flowered leafless (or with 1 small leaf), leaves entire ellipticolanceolate with only a few scattered hairs, scions creeping. *Engl. Bot. t.* 2352. *Hook. Scot. i. p.* 229. *Engl. Fl. v. iii. p.* 356.

Mountains or in mountainous countries, rare. Said to be gathered in Westmoreland and Scotland. *Fl.* July. ♃.—Taller and slenderer than the last, with smaller *flowers.*

5. H. *aurantíacum*, Linn. (*orange Mouse-ear Hawkweed*); scape nearly leafless simple hairy bearing a corymb of many flowers, leaves obovato-lanceolate entire rough with longish hairs. *Engl. Bot. t.* 1469. *Hook. Scot. i. p.* 229. *Engl. Fl. v. iii. p.* 358.

Woods in Banffshire and near Tarref. Coalston woods, E. Lothian. Woods east of Kenmore. Failsworth, near Manchester. I fear a very dubious native. *Fl.* July. ♃.—Hairs long on the upper part of the *scape;* black at the base, as they are upon the *involucre;* sometimes all black: hence often called *Grim-the-Collier.* *Flowers* deep orange.

6. H. *Aurícula*, Linn. (*orange Mouse-ear Hawkweed*); "leaves lanceolate acute nearly entire coarsely hairy green on both sides, scions scarcely so long as the leaves, scape downy and hairy corymbose, calyx shaggy." *Engl. Bot. t.* 2368. *Engl. Fl. v. iii. p.* 357.

On Dalehead, near Grassmere, Cumberland. *Hudson.*

*** *Stem with few* (1 *or* 2) *leaves, many-flowered.*

7. H. *Lawsóni*, Vill. (*glaucous hairy Hawkweed*); hairy especially the petioles, stem more or less branched upwards having 1—2 sessile leaves, those of the root ovato-lanceolate entire or toothed, involucres with hairs which are black at the base and mixed with black pedunculated glands.

α. Leaves shortly petiolate lanceolate, stem with 3—5 flowers. *Hook. Scot. i. p.* 230.—*H. Lawsoni*, *Engl. Bot. t.* 2083. *Engl. Fl. v. iii. p.* 363.

β. leaves broadly ovato-lanceolate entire upon long petioles. *Hook. Scot. i. p.* 230.

Mountains of Westmoreland, Wales and Scotland, in many places. *Fl.* August. ♃.—This species is best distinguished by its nearly entire and very villous *leaves*, especially their petioles, which are often quite silky. The whole plant is of a soft and flaccid texture.

8. H. *pulmonárium*, Sm. (*Lungwort Hawkweed*); hairy especially the petioles, stem 2—6 flowered with 1—2 leaves, those of the root ovato-lanceolate acute sinuato-dentate lengthened into a petiole, those of the stem sessile, involucre hairy, hairs black at the base and often glandular. *Engl. Bot. t.* 2307. *Engl. Fl. v. iii. p.* 362.—*H. murorum*, β.? *Hook. Scot. i. p.* 230.—*H. Halleri, Hook. in Fl. Lond. N. S. t.* 215. (*excl. syn.*)

Rocky places, in the mountainous vallies of Scotland. *Fl.* August. ♃.—I published this incorrectly as *H. Halleri*, in the New Series of the Flora Londinensis; but not without expressing my opinion that it might eventually prove a *var.* of *H. murorum*, from which however it may be known by being softer and more hairy, especially about the base of the *stem*, and petioles of the *leaves*, which latter are narrower, tapering gradually into the footstalk, with the toothing not so much confined to the base of the leaf, and by the larger and paler *flowers.* The *H. saxatile* of Jacquin also comes very near to this.

9. H. *murórum*, Linn. (*Wall Hawkweed*); stem with petiolated leaf branched upwards subcorymbose downy especially beneath the involucre where are a few black glands, radical leaves ovate mostly toothed at the base and hairy as well as the longish petioles, involucre downy. *Engl. Bot. t.* 2082. *Hook. Scot. i. p.* 230. *Engl. Fl. v. iii. p.* 359.

Woods, on walls and on rocks, common. *Fl.* Aug. ♃.—Perhaps the three species of this section ought to be considered as varieties of each other. The present is from 4—6 inches, in poor soils, to 2 feet in height. The *stem* is rather closely pubescent than hairy, with very few black glandular bristles. The *involucre* has the same short pubescence. The *leaves* vary much in their toothing and hairiness.

**** *Stem with many leaves, many-flowered.*

H. 10. H. *sylváticum*, Sm. (*Wood Hawkweed*); stem many-leaved branched upwards and subcorymbose slightly hairy and more or less downy beneath the involucre, leaves ovato-lanceolate or lanceolate toothed with the sharp teeth pointing upward somewhat hairy, involucre with very short pubescence. *Hook. Scot. i. p.* 231.

α. Leaves ovato-lanceolate green, with small teeth. *Hook. l. c.*—*H. sylvaticum, Engl. Bot. t.* 2031. *Engl. Fl. v. iii. p.* 361.—*H. murorum*, α. *Sm. Fl. Brit. p.* 830.

. leaves ovato-lanceolate spotted with dark purple, with large teeth. *Hook. l. c.*—*H. maculatum, Engl. Bot. t.* 2121.

γ. leaves lanceolate spotted and clouded with purple. *Hook. l. c.*—*H. pictum, Schleich.*

Hab. Mountain woods, walls and banks, frequent. β. and γ. not rare in Scotland. *Fl.* Aug. ♃.—One to two feet high, scarcely hairy on the stem. The *leaves* are usually numerous, more or less distinctly toothed. Mr. Banks finds it, near Plymouth, with quite entire foliage.

11. H. *paludósum*, Linn. (*Succory-leaved Hawkweed*); glabrous, stem panicled fistulose, leaves ovato-oblong acute toothed embracing the stem with their heart-shaped bases, scales of the stem with black hairs or bristles. *Engl. Bot. t.* 1094. *Hook. Scot. i. p.* 232. *Engl. Fl. v. iii. p.* 363.

Frequent in moist woods and rocky places, in the north of England, Wales and Scotland. *Fl.* Aug. ♃.—One to 2 or even 3 feet high. Readily known by the absence of all pubescence, its very amplexicaul *stem-leaves* with their spreading or deflexed teeth, together with the *calyx*, which has long, quite black hairs.

12. H. *mólle*, Jacq. (*soft-leaved Hawkweed*); "stem angular tubular leafy downy corymbose, leaves lanceolate slightly toothed hairy clasping the stem, lower ones stalked elliptical and obtuse." *Engl. Bot. t.* 2210. *Hook. Scot. i. p.* 364. *Engl. Fl. v. iii. p.* 364.

Woods in Scotland. Near Forfar, at the falls of the Tummel and in Glen Luss. *Fl.* July, Aug. ♃.—*Plant* about 1 foot high, remarkable for its obtuse radical *leaves*, which taper gradually into a long footstalk. *Scales* of the *involucre* with a few, black, glandular hairs.

13. H. *cerinthoídes*, Linn. (*Honey-wort-leaved Hawkweed*); stem corymbose hairy glandular above, leaves hairy very slightly toothed, radical ones oblongo-obovate petiolate, cauline ones oblong semiamplexicaul, involucre hairy. *Engl. Bot. t.* 2378. *Hook. Scot. i. p.* 232. *Engl. Fl. v. iii. p.* 365.

Rocks in the Highlands of Scotland, not uncommon, *Mr. G. Don. Fl.* Aug. ♃.

14. H. *amplexicáule*, Linn. (*amplexicaul Hawkweed*); glanduloso-pilose, stem corymbose, leaves toothed, radical ones oblongo-ovate petiolate, cauline ones cordate at the base amplexicaul. *All. Ped. t.* 15. *f.* 1. *t.* 50. *f.* 2. *Hook. Scot. i. p.* 232.

Walls of the castle of Cleish, Kinross-shire, *Mr. Arnott.* Clova mountains, *Mr. G. Don.*—Naturalized on the walls of Oxford Garden, *Mr. Bicheno*, who justly observes, that it has, therefore, an equally good right to a place in the *British Flora* as *Senecio squalidus*, and some other plants. *Fl.* Aug. ♃.—A most distinct and well marked species, every where clothed with brownish glandular hairs, most thick on the *peduncle* and *involucre*. The lower cauline *leaves* are more or less oblong, the upper ones truly cordate.

15. H. *denticulátum*; "stem erect leafy solid many-flowered cymose with downy glandular stalks, leaves sessile elliptic-lanceolate finely toothed nearly glabrous glaucous beneath." *Engl. Bot. t.* 212. *Hook. Scot. i. p.* 231. *Engl. Fl. v. iii. p.* 368.—*H. prænanthoides, Sm. Fl. Br. p.* 835, (*not Vill.*)

Woods at Loch Rannoch, Perthshire, and near Selkirk, Scotland. *Fl.* July, Aug. ♃.—If I am correct in my ideas of this, without having had the opportunity of seeing authentic specimens, it is a species not unfrequent in the Highlands, with the habit of *H. prænanthoides*, but with more lanceolate *leaves*, which are attenuated at the base, and by no means embrace the stem.

16. H. *prenanthoídes*, Vill. (*rough-bordered Hawkweed*); stem erect leafy simply hairy, panicle corymbose with hispid and glandular stalks, leaves oblong cordate and amplexicaul at the base, upper ones gradually smaller and ovato-cordate acuminate, all glaucous beneath and remotely toothed. *Engl. Bot. t.* 2235. *Hook. Scot. i. p.* 232. *Engl. Fl. v. iii. p.* 368. Note 7.

River sides in Scotland; but rare. Banks of the Esk; Near Pitmain; in Glen Lyon, and banks of the Don, in Braemar. *Fl.* Aug. ♃. —Three or 4 feet high, the *leaves* all cordate, and remarkably amplexicaul at the base, gradually smaller upwards.

H. 17. H. *sabaudum*, Sm. Linn.? (*shrubby broad-leaved Hawkweed*); "stem erect copiously leafy many-flowered, leaves ovato-lanceolate sharply toothed rough-edged somewhat clasping hairy beneath." *Engl. Bot. t.* 349. *Hook. Scot. i. p.* 233. *Engl. Fl. v. iii. p.* 367. Note 7.

"Coppices, groves and thickets, frequent." *Sm.* *Fl.* Aug. Sept. ♃. —The continental *H. sabaudum*, such as Allioni has figured, *t.* 27. *f.* 2. with very broad, deeply-toothed and crowded leaves, is surely very different from this, with which, though stated to be common, I regret to say I am unacquainted; unless, as I strongly suspect, it be the same as what I have lately received, gathered at Hartford bridges, near Norwich, by Mr. Wigham, a very accurate Botanist of that city. The *Engl. Bot. sabaudum* well represents this plant; only that the *leaves* in my specimens are narrower, almost lanceolate, more entire, and the whole plant is clothed with rather short but rigid hairs, which, upon the stem in particular, are split at the extremities into 2 or 3 recurved points. The *involucre* has its inner scales long and equal, the outer smaller and very lax, extending partly down the peduncle; the *pappus* is very white and feathery; the *fruit* linear, furrowed and finely striated transversely; all which characters are well represented or described by Sir Jas. E. Smith. From the *involucre* and dense white *pappus*, indeed, I should almost be led to arrange this plant under *Crepis*, in which genus I have endeavoured in vain to find any to which it can be referred, and I trust the attention of Norfolk Botanists will be further directed to it. Allioni's figure in his *Fl. Pedemontana*, *t.* 27. *f.* 1. has very much the habit of our plant, and seems very different from the *H. prænanthoides*, of which De Candolle makes it his var. β.—Sprengel refers to Smith's *sabaudum*, under *H. boreale* of Fries; but I know not whether correctly.

18. H. *umbellátum*, Linn. (*narrow-leaved Hawkweed*); stem erect simple very leafy, leaves linear-lanceolate subglabrous slightly toothed, flowers subumbellate, peduncles downy, involucres glabrous. *Engl. Bot. t.* 1771. *Hook. Scot. i. p.* 233. *Engl. Fl. v. iii. p.* 269.

Groves or stony and rocky places. *Fl.* Aug. Sept. ♃.—The most decidedly marked of any individual in this troublesome genus.

11. Crépis. *Linn.* Hawk's-beard.

Involucre tumid at the base, surrounded with deciduous scales, ribbed and furrowed, (often very obscurely). *Receptacle* naked. *Pappus* simple, sessile.—Name; κρηπις, a *slipper* or *last* in Greek, but why applied to this plant is not known.

H. 1. C. *tectórum*, Linn. (*smooth Hawk's-beard*); leaves glabrous runcinate the upper ones linear-sagittate amplexicaul, stem glabrous, panicle subcorymbose, involucre pubescent. *Engl. Bot. t.* 1111. *Hook. Scot. i. p.* 233. *Engl. Fl. v. iii. p.* 372. Note 6.

Meadows, pastures, roofs of cottages, &c. *Fl.* July. ⊙.—*Stems* 1—3 feet high. *Radical leaves* more or less pinnatifid or runcinate, their teeth or segments often horizontal, sometimes curved upwards. *Flowers* small, yellow.

H. 2. C. *biénnis*, Linn. (*rough Hawk's-beard*); leaves rough runcinato-pinnatifid their lobes toothed, involucre downy and somewhat bristly. *Engl. Bot. t.* 149. *Engl. Fl. v. iii. p.* 373.

Chalky pastures in England; Kent, Suffolk, &c. Near Bangor, N. Wales, *Mr. W. Wilson.* *Fl.* June, July. ♂.—*Stems* 2—4 feet high, furrowed, rough above. *Flowers* much larger than in the preceding. *Pappus* very white, and upon a *fruit* so elongated upwards as to form a stalk.

12. Borkhaúsia. *Mœnch.* Borkhausia.

Involucre oval, with deciduous scales, ribbed and furrowed. *Receptacle* naked. *Pappus* simple, stalked.—Named in honour of *Moritz Borkhausen*, a German Botanist.

1. B. *fœ́tida*, De Cand. (*stinking Borkhausia*); leaves scabrous sessile runcinato-pinnatifid, upper ones lanceolate cut at the base, stem hairy, involucre downy.—*Crepis fœtida, Linn.*—*Engl. Bot. t.* 406. *Engl. Fl. v. iii. p.* 370.

Dry chalky ground; Cambridgeshire, Norfolk and Kent. *Fl.* June, July. ♂.—*Stem* spreading. *Corollas* red externally. The herb is very milky, and said to diffuse a smell resembling bitter almonds.

13. Hypochœ́ris. *Linn.* Cat's-ear.

Involucre oblong, imbricated. *Receptacle* chaffy. *Pappus* feathery, stipitate or sessile.—Name; υπο, *for*, and χοιρος, a *hog*, the roots being eaten by that animal.

1. H. *maculáta*, Linn. (*spotted Cat's-ear*); stem almost leafless solitary, leaves obovato-oblong undivided toothed (spotted above). *Engl. Bot. t.* 225. *Hook. Scot. i. p.* 234. *Engl. Fl. v. iii. p.* 375.

In open, chalky and limestone pastures. In England. Ormeshead, N. Wales, *Mr. W. Wilson.* Dry woods, east of Forfar, *Mr. G. Don.* *Fl.* July. ♃.—*Leaves* almost all radical, scabrous. *Stem* or *scape* with 2 or 3 small lanceolate *scales* or *bracteas*, and, as well as the *involucre*, slightly hispid. *Flowers* solitary, large, deep yellow. Professor Henslow gathered a *var.* with from 3 to 5 long branches upon the stem, in the Devil's ditch, Cambridgeshire; but in a spot where the ground had been pared the previous year.

H. 2. H. *glábra*, Linn. (*smooth Cat's-ear*); nearly glabrous, involucre oblong regularly imbricated, stem branched somewhat leafy, radical leaves dentato-sinuate. *Engl. Bot. t.* 575. *Hook. Scot. i. p.* 234. *Engl. Fl. v. iii. p.* 375.

Fields and gravelly soils in many places, but not very common. *Fl.* July, Aug. ⊙.—A foot or more high. *Leaves* oblong, slightly hairy. *Flowers* small, yellow. *Pappus* of the central *florets* stalked, that of the *circumference* sessile.

H. 3. H. *radicáta*, Linn. (*long-rooted Cat's-ear*); stem branched leafless glabrous, peduncles with small scales, leaves runcinate obtuse scabrous. *Engl. Bot. t.* 831. *Hook. Scot. i. p.* 234. *Engl. Fl. v. iii. p.* 376.

Meadows, pastures and way-sides, frequent. *Fl.* July. ♃.—*Leaves* all radical, spreading. *Stem* a foot or more high. *Peduncles* a little thickened upwards. *Flowers* rather large, yellow. *Pappus* stalked.

14. Lapsána. *Linn.* Nipple-wort.

Involucre with small scales at the base. *Receptacle* naked. *Fruit* quickly deciduous. *Pappus* none.—Name; λαπαζω, *to purge*, from its laxative qualities.

1. L. *commúnis*, Linn. (*common Nipple-wort*); involucre of the fruit angular, stem panicled, peduncles slender, leaves ovate petiolate angulato-dentate. *Engl. Bot. t.* 844. *Hook. Scot. i. p.* 234. *Engl. Fl. v. iii. p.* 376.

Waste and cultivated ground, common. *Fl.* July, Aug. ⊙.—*Stems* 2—4 feet high. *Leaves* soft and thin, slightly hairy, the *radical* ones more or less lyrate. *Flowers* small, yellow.

2. L. *pusílla*, Willd. (*dwarf Nipple-wort*); scape branched very thick and fistulose upwards, leaves obovato-oblong toothed. *Hook. in Fl. Lond. N. S. t.* 65. *Engl. Fl. v. iii. p.* 377.—*L. minima, De Cand.*—*Hook. Scot. i. p.* 234.—*Hyoseris minima, Linn.*—*Engl. Bot. t.* 95.

Corn-fields, in gravelly soils. *Fl.* June, July. ⊙.—*Scapes* 6—8 inches high, more or less branched, remarkable for their clavate and fistulose extremities. *Flowers* small, yellow.

15. Cichoríum. *Linn.* Wild Succory.

Involucre of 8 scales, surrounded by 5 smaller ones at the base. *Receptacle* naked or slightly hairy. *Pappus* sessile, scaly, shorter than the fruit.—Name; *chikoùryeh*, in Arabic. The Egyptians eat a vast quantity of this vegetable.

H. 1. C. *Íntybus*, Linn. (*Wild Succory*); flowers sessile axillary in pairs, leaves runcinate. *Engl. Bot. t.* 539. *Hook. Scot. i. p.* 234. *Engl. Fl. v. iii. p.* 379.

Borders of fields and waste places; chiefly in a light, gravelly or chalky soil. *Fl.* July, Aug. ♃.—*Stem* 1 foot to 3 feet high, erect, branched. *Flowers* numerous, large, bright but pale blue.—This is not the *Endive* or *Succory* of the gardens, which is *C. Endivia*, and supposed to be a native of India.—The specific name of both is derived from the Arabic, *Hendibeh*.

** *Corollas all tubular; and generally spreading, so as to form an hemisphærical head.* (Cinarocephalæ. *Juss.; Artichoke or Thistle Tribe*). Gen. 16—22.

16. Árctium. *Linn.* Burdock.

Involucre globose, each of its scales with an incurved hook at the extremity. *Receptacle* chaffy. *Pappus* simple.—Name; *αϱϰτος*, a *bear*, from the coarse texture of the involucres.

H. 1. A. *Láppa*, Linn. (*common Burdock*); leaves cordate stalked. *Hook. Scot. i. p.* 235.

α. calyx glabrous. *A. Lappa*, *Engl. Bot. t.* 38. *Engl. Fl. v. iii. p.* 380.
β. calyx with a cobweb-like down. *A. Bardana*, *Willd.*—*Engl. Bot. t.* 2478. *Engl. Fl. v. iii. p.* 381.

Waste places and way-sides, common. *Fl.* July, Aug. ♂.—Three feet or more high. Radical *leaves* very large and often slightly toothed. *Involucre* with hooked scales, which fasten themselves most pertinaciously to clothes and the coats of animals. These *scales* are sometimes glabrous, and occasionally have a more or less abundant cottony substance interwoven with them; whence two species have been established by some authors. *Flowers* purple.

17. Serrátula. *Linn.* Saw-wort.

Diœcious. Involucre oblong, imbricated with unarmed scales. *Receptacle* setose or chaffy. *Fruit* obovate. *Pappus* rough, nearly equal.—Name; *serrula*, a little *saw*, which the margins of the leaves represent.

H. 1. S. *tinctória*, Linn. (*common Saw-wort*); leaves entire pinnatifid finely serrated, outer scales of the involucre ovate appressed, inner ones linear coloured. *Engl. Bot. t.* 38. *Hook. Scot. i. p.* 235. *Engl. Fl. v. iii. p.* 382.

Thickets and pastures, less frequent in Scotland. *Fl.* Aug. ♃.—Two to 3 feet high, branched, stiff. *Flowers* purple.—It dyes cloth of a yellow colour.

18. Saussúrea. *De Cand.* Saussurea.

Involucre oblong, imbricated with unarmed scales. *Receptacle* setose or chaffy. *Pappus* double, sessile; *ext.* of short, rough bristles, persistent: *int.* feathery, united at the base and deciduous.—Named in honour of the two *Saussures*, Father and Son.

1. S. *alpína*, De Cand. (*alpine Saussurea*); leaves toothed cottony beneath lanceolate, those of the root ovato-lanceolate stalked, flowers in a clustered umbel. *Engl. Bot. t.* 599. *Hook. Scot. i. p.* 235. *Engl. Fl. v. iii. p.* 383.

Moist alpine rocks. Snowdon. *Ray; Mr. W. Wilson.* Frequent on the Highland mountains of Scotland. *Fl.* Aug. ♃.—*Stem* 8—12 inches high, erect, simple, woolly. *Leaves* few upon the stem. *Flowers* rather large, purple.

19. CÁRDUUS. *Linn.* Thistle.

Involucre tumid, imbricated with spinous scales. *Receptacle* hairy. *Pappus* deciduous, rough.—Name: Théis derives this from *ard*, in Celtic, a *point;* whence also *αρδος*, in Greek; *arduus*, in Latin; and *Cardo*, and even *Cardinal.**

* *Leaves decurrent.*

H. 1. C. *nútans*, Linn. (*Musk Thistle*); leaves decurrent spinous, flowers drooping, scales of the involucre lanceolate cottony, outer ones spreading. *Engl. Bot. t.* 1112. *Hook. Scot. i. p.* 235. *Engl. Fl. v. iii. p.* 384.

Waste ground, in dry, stony or chalky soils. *Fl.* July, Aug. ♂.—(⊙. *Sm.*)—Two to 3 feet high, not much branched, cottony, interruptedly winged. *Leaves* oblong, deeply sinuated. *Flowers* solitary, large, handsome, purple; said to smell powerfully of musk in warm weather: most so in the evening, according to Lightfoot.

H. 2. C. *acanthoídes*, Linn. (*welted Thistle*); leaves decurrent sinuated spinous, involucre globose nearly sessile, its scales linear slightly recurved. *Engl. Bot. t.* 973. *Hook. Scot. i. p.* 236. *Engl. Fl. v. iii. p.* 385.—*C. polyacanthos, Curt.*

Way-sides and waste places; varying with *white flowers*. *Fl.* June, July. ⊙—Three to 4 feet high, uninterruptedly winged, branched. *Flowers* clustered at the ends of the branches, deep purple.

3. C. *tenuiflórus*, Curt. (*slender-flowered Thistle*); leaves decurrent sinuated spinous somewhat cottony beneath, involucres nearly cylindrical clustered sessile, their scales lanceolate erect. *Engl. Bot. t.* 412. *Hook. Scot. i. p.* 236. *Engl. Fl. v. iii. p.* 385.

Waste sandy places, especially near the sea. *Fl.* June, July. ⊙.—Two to 4 feet high, winged the whole way up the *stem* with the decurrent bases of the *leaves*.

** *Leaves sessile.*

4. C. *mariánus*, Linn. (*Milk Thistle*); leaves amplexicaul waved spinous the radical ones pinnatifid, scales of the involucre subfoliaceous recurved spinous at the margin. *Engl. Bot. t.* 976. *Hook. Scot. i. p.* 236. *Engl. Fl. v. iii. p.* 386.

Banks and waste places: rare in Scotland. About Edinburgh, and on Dumbarton Rock. *Fl.* July. ♂.—Three to 5 feet high. Distinguishable at once by the milky veins on its *leaves*, and the great recurved *scales* of the *involucre*.—A drop of the Virgin Mary's milk was considered to have produced these white veins, as that of Juno was supposed to be the origin of the *milky way*. - very nourishing to cattle spreads rapidly - introduced into Australia it takes possession of whole districts. Act against allowing them to grow.

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* "A Cardinal is the *point* or pivot, upon which the door of the holy church hinges."—*Théis.*

Thistle-seeds yield a valuable oil.

20. Cnicus. *Linn.* Plume-thistle.

Involucre tumid, imbricated with spinous scales. *Receptacle* hairy. *Pappus* deciduous, feathery.—Name, from κνιζω, to *prick*, or *wound.*

* *Leaves decurrent.*

1. C. *lanceolátus*, Willd. (*Spear Plume-thistle*); leaves decurrent hispid pinnatifid, their segments generally two-lobed spreading spinous, involucres ovate tomentose, their scales lanceolate spreading. *Hook. Scot. i. p.* 236. *Engl. Fl. v. iii. p.* 388.—*Carduus lanceolatus, Linn. Engl. Bot. t.* 107.

Way-sides and pastures, frequent. *Fl.* July, Aug. ♂.—Three to 4 feet high. *Leaves* downy beneath; their points long and very sharp. *Flowers* standing singly, large.

2. C. *palústris*, Willd. (*Marsh Plume-thistle*); leaves decurrent scabrous pinnatifid spinous, involucres ovate clustered, their scales ovato-lanceolate mucronate appressed. *Hook. Scot. i. p.* 236. *Engl. Fl. v. iii. p.* 388.—*Carduus palustris, Linn.—Engl. Bot. t.* 974.

Moist meadows and shady places, frequent. *Fl.* July. ♂.—Four to 6 feet high, very full of rather short spines, erect. Remarkable for its clustered heads of *flowers*, whose *involucres* have the *scales* broad, appressed, keeled and mucronated.

** *Leaves sessile or nearly so.*

3. C. *arvénsis*, Hoffm. (*creeping Plume-thistle*); leaves sessile pinnatifid spinous, stem panicled, involucre ovate its scales appressed mucronated. *Hook. Scot. i. p.* 237. *Engl. Fl. v. iii. p.* 389. *Carduus arvensis, Curt.—Engl. Bot. t.* 975.—*Serratula arvensis, Linn.* most exhaustive to the soil - root 9 feet long -

Fields and by way-sides, too abundant. *Fl.* July. ♃.—One to 3 feet high. *Root* very creeping. *Stems* angular, but not winged.

4. C. *Forstéri*, Sm. (*branching Bog Plume-thistle*); "leaves slightly decurrent pinnatifid spinous downy beneath, stem panicled hollow, involucre ovate rather cottony, outer scales spinous." *Engl. Fl. v. iii. p.* 390.

Boggy woods, near Frant, Sussex, two miles from Tunbridge Wells, *Mr. T. F. Forster.* *Fl.* July, Aug. ♃.—"The *fructification* most accords with that of the last two species, while the *herbage* and *habit* approach some of the following, or rather the exotic *Cnicus rivularis.* Willd." *Sm.*

H. 5. C. *erióphorus*, Willd. (*woolly-headed Plume-thistle*); leaves sessile pinnatifid every other segment pointing upwards spinous scabrous, involucres sphærical woolly. *Hook. Scot. i. p.* 237. *Engl. Fl. v. iii. p.* 390—*Carduus eriophorus, Linn.—Engl. Bot. t.* 386.

Waste ground and road-sides, in a chalky and limestone soil. Rare in Scotland. Near Edinburgh; Dumbarton and in Appin. *Fl.* July. ♂.—*Stems* much branched, 3 feet high, the stoutest of the genus, furrowed. *Leaves* acuminated, white and downy beneath; their lobes alternately pointing upwards and downwards and terminated by sharp *spines*. *Involucre* very large; its *scales* linear, mucronate, very much interwoven with a woolly substance.

6. C. *tuberósus*, Willd. (*tuberous Plume-thistle*); "leaves deeply pinnatifid lobed fringed with prickles, lower ones on long stalks, stem almost single-flowered without wing or prickles, scales of the involucre minutely spinous nearly glabrous, root creeping tuberous." *Engl. Bot. t.* 2562. *Engl. Fl. v. iii. p.* 391.

In a thicket, called Great Ridge, on the Wiltshire downs, between Boyton house and Fonthill, abundantly; *A. B. Lambert, Esq.* *Fl.* Aug. ♃.—A most distinct and handsome species.

H. 7. C. *heterophýllus*, Willd. (*melancholy Plume-thistle*); leaves amplexicaul lanceolate soft ciliato-dentate undivided or laciniated white and downy beneath, flowers mostly solitary. *Hook. Scot. i. p.* 372. *Engl. Fl. v. iii. p.* 397.—*Carduus heterophyllus, Linn.*—*Engl. Bot. t.* 675.

Moist mountain pastures in the north, frequent. *Fl.* July. ♃.—Two to 3 feet high. *Stems* striated and, as well as the underside of the leaves, covered with a white cottony down. *Leaves* mostly radical and those petiolated. *Involucre* oblong, dark green; its *scales* lanceolate, acuminate, but not spiny.

H. 8. C. *praténsis*, Willd. (*Meadow Plume-thistle*); upper leaves sessile lanceolate soft waved at the edge and unequally spinous pubescent cottony beneath, flowers mostly solitary. *Hook. Scot. i. p.* 237. *Engl. Fl. v. iii. p.* 393.—*Carduus pratensis, Huds.*—*Engl. Bot. t.* 177.

Low wet pastures; rare in Scotland. Isla and Arran. *Fl.* July. ♃.—About 1 foot high. *Leaves* waved, toothed and spiny. *Flowers* solitary. *Scales* of the *involucre* with short spines, lanceolate, closely imbricated, cobwebbed.

9. C. *acaulis*, Willd. (*dwarf Plume-thistle*); stemless, involucre glabrous. *Hook. Scot. i. p.* 237. *Engl. Fl. v. iii. p.* 394.—*Carduus acaulis, Linn.*—*Engl. Bot. t.* 161.

Frequent in dry gravelly or chalky pastures, in some parts of England; as in Dorsetshire and Norfolk. Rare in Scotland, *Lightf.* *Fl.* July. ♃.—*Leaves* spreading close to the ground, oblong, pinnatifid, their segments lobed and spinous, glabrous. From the centre of these *leaves* arises one sessile, purple *flower*. *Involucre* obovato-cylindrical, imbricated with closely placed, appressed, lanceolate, acute, greenish *scales*, not spinous.

21. ONOPÓRDUM. *Linn.* Cotton-thistle.

Involucre tumid, imbricated; the scales spreading and spinous. *Receptacle* honey-combed. *Fruit* four-cornered. *Pappus* rough, deciduous.—Name; *ονος*, *asinus*, and *περδω*, *pedere*, such being the effect, according to Pliny, upon the ass who eats of it.

H. 1. O. *Acánthium*, Linn. (*common Cotton-thistle*); scales of the involucre spreading subulate, leaves ovato-oblong sinuated and spinous decurrent woolly on both sides. *Engl. Bot. t.* 977. *Hook. Scot. i. p.* 238. *Engl. Fl. v. iii. p.* 395.

Waste ground, road-sides, &c. in a gravelly soil. Less frequent in Scotland. *Fl.* Aug. ♂.—Four to 6 feet high, branched and winged at the summit; wings very spinous. *Involucre* globose. *Flowers* purple. The seeds of this and of others of the Thistle tribe are much eaten by birds. It is *cultivated* in Scotland as the *Scotch Thistle.*

22. CARLÍNA. *Linn.* Carline Thistle.

Involucre imbricated, tumid; the *outer scales* with numerous spines, the *inner* ones coloured, spreading, membranous. *Receptacle* chaffy. *Pappus* feathery.—Name; the same as *Carolina*, from a tradition that the root was shown by an angel to Charlemagne, as a remedy for the plague which prevailed in his army.

H. 1. C. *vulgáris*, Linn. (*common Carline*); stem many-flowered corymbose pubescent, leaves lanceolate unequally spinous and sinuated downy beneath. *Engl. Bot. t.* 1144. *Hook. Scot. i. p.* 238. *Engl. Fl. v. iii. p.* 397.

Dry hilly pastures, and fields. *Fl.* June. ♂.—One foot high; very spinous, but the spines generally short. *Ext. scales* or *leaflets* of the *involucre* much resembling the *leaves*, but smaller; *inner ones* linear, membranous, yellow, entire, spreading and forming an horizontal ray around the purplish florets. *Anthers* with 2 bristles at the base.

(*See* Centaurea *in* ORD. FRUSTRANEA.)

*** *Corollas all tubular, erect and parallel, crowded, forming a level top, without a ray.* (*part of* CORYMBIFERÆ. *Juss.*) Gen. 23—26.

23. BIDÉNS. *Linn.* Bur-marigold.

Involucre of many scales, outer ones or *bracteas* at the base foliaceous. *Receptacle* plane, chaffy. *Corollas* sometimes radiant. *Fruit* crowned with from 2—5 persistent awns, which are rough with minute, deflexed bristles.—Name; *bis, double,* and *dens,* a *tooth*; from the two awns or teeth which crown the fruit.

1. B. *cérnua*, Linn. (*nodding Bur-marigold*); flowers drooping, bracteas lanceolate entire (longer than the involucre), leaves lanceolate serrated undivided, bristles of the fruit about 3 erect. *Engl. Bot. t.* 1114. *Hook. Scot. i. p.* 238. *Engl. Fl. v. iii. p.* 399.

Sides of rivulets, ditches and lakes, frequent. *Fl.* June—Aug. ⊙.—One to two feet and more high, branched and slightly hispid. *Leaves* glabrous, deeply serrated. *Flowers* large, greenish-yellow.

H. 2. B. *tripartíta*, Linn. (*trifid Bur-marigold*); leaves tripartite, leaflets lanceolate deeply serrated, bristles of the pericarp 2—3. *Engl. Bot. t.* 1113. *Hook. Scot. i. p.* 238. *Engl. Fl. v. iii. p.* 399.

Marshy places, sides of ponds and lakes. *Fl.* July. ⊙.—Readily distinguished by its tri- and sometimes quinquepartite *leaves*. The *flowers*, which are slightly drooping, are also smaller than those of *B. cernua*.

24. Eupatórium. *Linn.* Hemp-agrimony.

Involucre imbricated, oblong. *Florets* few. *Receptacle* naked. *Pappus* rough or feathery.—Name; from *Eupator*, the surname of Mithridates, king of Pontus, who brought this plant into use.

H. 1. E. *cannabínum*, Linn. (*common Hemp-agrimony*); leaves opposite subpetiolate 3—5-partite, their segments lanceolate deeply serrated. *Engl. Bot. t.* 428. *Hook. Scot. i. p.* 238. *Engl. Fl. v. iii. p.* 400.

Banks of rivers and watery places. *Fl.* July, Aug. ♃.—*Stems* 3—4 feet high, branched. *Leaves* downy, the middle lobe the longest. *Flowers* very numerous, thickly crowded in terminal *corymbs*, of a pale reddish-purple. *Style* longer than the *corolla*, deeply cleft. Plant slightly aromatic.

25. Chrysócoma. *Linn.* Goldylocks.

Cal. imbricated, hemisphærical. *Receptacle* naked. *Pappus* rough. *Style* scarcely longer than the florets.—Name; χρυσος, *gold*, and κομη, a *head of hair*: from the colour of the flowers.

1. C. *Linosýris*, Linn. (*flax-leaved Goldylocks*); herbaceous, leaves linear glabrous, scales of the involucre loosely spreading. *Engl. Bot. t.* 2505. *Engl. Fl. v. iii. p.* 402.

Rocky cliffs of Berryhead, Devon. *Fl.* Aug. Sept. ⊙.

26. Diótis. *Desf.* Cotton-weed.

Involucre imbricated, hemisphærical. *Receptacle* chaffy, its scales fringed. *Pappus* none. *Corolla* with two ears at the base, which border the germen.—Name δις, *two*, and ους, ωτος, an *ear*, from the circumstance just mentioned.

1. D. *marítima*, Cass.—*Hook. in Fl. Lond. N. S. t.* 137. *Engl. Fl. v. iii. p.* 403.—*Diotis candidissima, Desf.*—*Santolina maritima, Linn. MSS. Engl. Bot. t.* 141.—*Athanasia maritima*, and *Filago maritima, Linn.*

Sandy sea-shores, principally on the east and south of England. *Fl.* Aug. Sept. ♃.—*Roots* running deep into the sand. *Leaves* numerous, oblong, covered with a dense white tomentum, as are the *scales* of the *involucre*, which in a great measure conceal the small yellow *corollas*.

(*See* Tanacetum, Senecio, Aster *and* Anthemis *in* Ord. II.)

ORD. II. SUPERFLUA.

Florets of the centre complete, having anthers and pistils; those of the circumference with pistils only: (thus as it were superfluous); all bearing seed.—Gen. 27.—~~55~~. 47.

* *Corollas of the marginal florets obsolete or wanting.* Discoid. (*Corymbiferæ. Juss.*)—Gen. 27—30.

27. TANACÉTUM. *Linn.* Tansy.

Involucre hemisphærical, imbricated. *Receptacle* naked. *Florets* of the ray trifid, obsolete, sometimes wanting. *Fruit* crowned with a membranous margin or *pappus.*—Name; altered from *Athanasia;* being α, *not,* and θανατος, *death,* or that which does not easily fade.

H. 1. T. *vulgáre,* Linn. (*common Tansy*); leaves bipinnatifid inciso-serrate. *Engl. Bot. t.* 1229. *Hook. Scot. i. p.* 239. *Engl. Fl. v. iii. p.* 405.

Border of fields and road-sides. *Fl.* Aug. ♃.—One to 3 feet high. *Flowers* in a terminal *corymb.*—Whole plant bitter and aromatic, much used in medicine, and also in domestic economy.

28. ARTEMÍSIA. *Linn.* Wormwood, Southernwood, Mugwort.

Involucre ovate or rounded, imbricated. *Receptacle* naked or hairy. *Florets* of the ray awl-shaped. *Pappus* 0.—Named from *Artemis,* the Diana of the Greeks.

1. A. *campéstris,* Linn. (*Field Southernwood*); leaves bipinnatifid glabrous above with linear segments, stems procumbent before flowering, twiggy. *Engl. Bot. t.* 338. *Engl. Fl. v. iii. p.* 406.

Rare. Dry sandy heaths, in Norfolk and Suffolk, principally in the vicinity of Thetford and Bury. *Fl.* Aug. ♃.

H. 2. A. *marítima,* Linn. (*Sea Wormwood*); erect, leaves downy bipinnatifid with linear segments, flowers racemed oblong, receptacle naked.

α. racemes drooping. *A. maritima, Engl. Bot. t.* 1706. *Hook. Scot. i. p.* 239. *Engl. Fl. v. iii. p.* 407.

β. racemes erect.—*A. gallica. Willd.*—*Engl. Bot. p.* 1706. *t.* 1001. (*A. marit.*)

Sea shores and in salt marshes, where the two *varieties* may be seen growing together, and sometimes from the same root. *Fl.* Sept. ♃.

H. 3. A. *Absínthium,* Linn. (*common Wormwood*); leaves bipinnatifid clothed with short silky down, segments lanceolate, flowers hemisphærical drooping, receptacle hairy. *Engl. Bot. t.* 1230. *Hook. Scot. i. p.* 239. *Engl. Fl. v. iii. p.* 408.

Waste places and about villages, in dry soils. Near Edinburgh. *Fl.* Aug. ♃.—One to 1½ foot high, erect. *Panicles* of *flowers* erect, leafy. *Floral leaves* undivided. *Flowers* dingy yellow, rather large, hemisphærical; *florets* of the *ray* very short.—Aromatic and bitter, and has been much employed in medicine.

H. 4. A. *vulgáris*, Linn. (*Mugwort*); leaves pinnatifid their segments white and downy beneath, flowers somewhat racemed ovate, receptacle naked. *Engl. Bot. t.* 978. *Hook. Scot. i. p.* 240. *Engl. Fl. v. iii. p.* 409.

Hedges and waste places, common. *Fl.* Aug. ♃.—*Stems* 3—4 feet high, furrowed.

5. A. *cærulescens*, Linn. (*bluish or Lavender-leaved Mugwort*); "leaves hoary most of them lanceolate undivided tapering at the base, lower ones variously divided, flowers erect cylindrical, receptacle naked." *Engl. Bot. t.* 2426. *Engl. Fl. v. iii. p.* 410.

Sea-coast near Boston, Lincolnshire, and in the isle of Wight: but it cannot be found there now. *Fl.* Aug. Sept. ♃.

29. GNAPHÁLIUM. *Linn.* Cudweed.

Involucre imbricated, with (often) coloured, membranous scales. *Receptacle* naked. *Florets* of the circumference subulate; some of the centre occasionally abortive. *Pappus* rough or feathery.—Name; γναφαλον, *soft down*, or *wool*, with which the leaves are clothed.

* *Flowers diœcious.* (Antennaria. *Gærtn.*)

H. 1. G. *dioicum*, Linn. (*Mountain Cudweed*); shoots procumbent stems simple, corymbs crowded, root-leaves spathulate, flowers diœcious, inner scales of the involucre elongated obtuse coloured. *Engl. Bot. t.* 267. *Hook. Scot. i. p.* 240. *Engl. Fl. v. iii. p.* 413.

Mountain heaths, abundant. *Fl.* June, July. ♃.—*Flowering stems* 3—4 inches high. *Leaves* greenish above, white beneath. Inner *scales* of the *involucre* often rose-coloured, especially in the fertile flower.

H. 2. G. *margaritáceum*, Linn. (*American Cudweed, Pearly Everlasting*); herbaceous, stem branched above, leaves linear-lanceolate acute alternate cottony especially beneath, flowers corymbose level-topped. *Engl. Bot. t.* 2018. *Engl. Fl. v. iii. p.* 412.

Moist meadows; near Bocking, Essex. Banks of the Rymny, South Wales; and near Dalgelly, Merionethshire, (*W. F. Talbot, Esq.*) Wire Forest, Worcestershire; and near Litchfield. *Fl.* Aug. ♃.

** *Flowers perfect.*

3. G. *luteo-álbum*, Linn. (*Jersey Cudweed*); herbaceous, leaves semiamplexicaul linear-oblong waved woolly on both sides, lower ones obtuse, flowers densely tufted. *Engl. Bot. t.* 1002. *Engl. Fl. v. iii. p.* 411.

Banks and walls in Jersey. Between Hanxtown and Little Shelford, Cambridgeshire. *Fl.* July, Aug. ⊙.—*Corollas* yellow and distinct; while those of the following species are inconspicuous.

4. G. *sylváticum*, Linn. (*Highland Cudweed*); stem simple nearly erect downy, flowers axillary forming an interrupted leafy spike, leaves linear-lanceolate downy. *Hook. Scot. i. p.* 240.

α. leaves woolly on both sides. *G. sylvaticum, Engl. Bot. t.* 913. *Engl. Fl. v. iii. p.* 414.

H. β. leaves nearly glabrous above, spike longer more interrupted. *G. rectum, Huds.—Engl. Bot. t.* 124. *Engl. Fl. v. iii. p.* 415.

Groves, thickets and pastures; frequent in Scotland. *Fl.* Aug. ♃.—*Scales* of the involucre oblong, shining, with a broad, brown border.

H. 5. G. *supínum*, Linn. (*dwarf Cudweed*); stem decumbent branching only from the base, flowering-stems erect, flowers solitary or racemed, leaves linear downy on both sides. *Engl. Bot. t.* 1193. *Hook. Scot. i. p.* 240. *Engl. Fl. v. iii. p.* 415.—*G. alpinum, Lightf. Scot. t.* 20. *f.* 2.

Summits of all the Highland mountains, abundant. *Fl.* July, Aug. ♃.—Whole plant rarely exceeding 2—3 inches in height, clothed with a white cottony substance. Very nearly allied to the preceding, yet we do not find intermediate states.

H. 6. G. *uliginósum*, Linn. (*Marsh Cudweed*); stem very much branched diffuse woolly, leaves linear lanceolate downy, flowers in terminal crowded clusters, which are shorter than the leaves. *Engl. Bot. t.* 1194. *Hook. Scot. i. p.* 241. *Engl. Fl. v. iii. p.* 416.

Sandy and wet places; especially where water occasionally stands. *Fl.* Aug. Sept. ⊙.—A span high, much branched. *Flowers* 2—3 together in the closely placed upper *leaves*, small, sessile, forming oblong clusters at the extremity of the branches. *Scales* of the *involucre* yellowish-brown, shining, glabrous. Filago

7. G. *gállicum*, Huds. (*narrow-leaved Cudweed*); stem erect dichotomous, leaves linear-acuminate downy, flowers crowded axillary and terminal, clusters much shorter than the leaves. *Engl. Bot. t.* 2369. *Hook. Scot. i. p.* 241. *Engl. Fl. v. iii. p.* 417.—*Filago gallica, Linn.*

Gravelly and sandy fields; about Castle Heveningham, Essex. In Derbyshire. I possess specimens gathered in Kent, by *Mr. Bicheno.* Near Forfar; and near Newburgh, Fifeshire. *Fl.* July, Aug. ⊙.—*Stem* about a span high, slender, leafy. *Flowers* small, oblong, in rather distant, leafy clusters.—The greater length of the leaves seems chiefly to distinguish this from the following.

H. 8. G. *mínimum*, Sm. (*least Cudweed*); stem erect branched, branches spreading, leaves lanceolate acute cottony, flowers conical clustered lateral and terminal, clusters longer than the leaves. *Engl. Bot. t.* 1157. *Hook. Scot. i. p.* 241. *Engl. Fl. v. iii. p.* 417.—*Filago montana, Sibth.* (*not Linn.*)—*F. arvensis, Ehrh. Herb.* 100. (*not of Linn.*) *Sm.*

Dry and gravelly places, frequent. *Fl.* July, Aug. ⊙.—*Stems* 4—6 inches high, slender, branched above in a dichotomous manner. *Involucres* downy, broad at the base. *Florets* yellowish.—Said by Smith to be smaller and less woolly than the true *Filago montana* of the Linnæan Herbarium.

H. 9. G. *germánicum*, Huds. (*common Cudweed*); stem erect proliferous at the summit, leaves lanceolate downy acute, flowers globoso-capitate in the axils of the branches and terminal. *Engl. Bot. t.* 1946. *Hook. Scot. i. p.* 241. *Engl. Fl. v. iii. p.* 418.

Sandy and gravelly places and dry pastures. *Fl.* June, July. ⊙.—*Stems* 6—8 inches high, erect, very leafy, terminated by a globular head of small, ovate *flowers*, from beneath which spring 2—3 or more horizontal branches, in a proliferous manner, each terminated by a head of flowers. This curious mode of growth occasioned the term of *Herba impia* to be applied by the old Botanists to this plant, as if the offspring were undutifully exalting itself above the parent. *Scales* of the involucre yellowish, shining, very acute, submucronate.

30. CONÝZA. *Linn.* Spikenard.

Involucre roundish, imbricated. *Receptacle* naked. *Florets* of the circumference 3-toothed. *Pappus* rough.—Name; κωνωψ, a *Gnat;* the plant having been supposed to possess the virtue of driving away insects.

H. 1. C. *squarrósa*, Linn. (*Ploughman's Spikenard*); leaves pubescent ovato-lanceolate serrated the upper ones entire, stem herbaceous corymbose, scales of the involucre recurved leafy. *Engl. Bot. t.* 1195. *Hook. Scot. i. p.* 241. *Engl. Fl. v. iii. p.* 420.

Frequent on chalky or clayey soils, in England. Rare, if really wild, in Scotland. Near Blair in Athol? *Dr. Parsons. Fl.* Sept. Oct. ♂.—*Stem* 2—3 feet high. *Panicle* leafy, with the leaves entire. *Lower leaves* stalked. *Flowers* yellow. *Florets* of the circumference very small, ligulate.

(*See* PETASITES *in the following section.*)

** *Corollas of the circumference or ray ligulate.* (Radiatæ.)—Gen. 31—~~33~~. 47.

31. ERÍGERON. *Linn.* Flea-bane.

Involucre imbricated with numerous linear *scales. Receptacle* naked. *Florets* of the ray numerous, very narrow, (mostly of a different colour from the disk.) *Pappus* simple.—Name; ερι, *early*, and γερων, *an old man:* from the bald heads of the receptacles, after the flowers and fruit have fallen.

H. 1. E. *canadénsis*, Linn. (*Canada Flea-bane*); hairy, leaves lanceolate nearly entire, flowers numerous panicled. *Engl. Bot. t.* 2019. *Engl. Fl. v. iii. p.* 421.

Waste and cultivated ground, in England, occasionally; but probably introduced. *Fl.* Aug. Sept. ⊙—*Flowers* yellowish-white.

H. 2. E. *ácris*, Linn. (*blue Flea-bane*); peduncles alternate (scarcely "racemose") single-flowered, pappus as long as the florets of the ray, leaves lanceolate obtuse. *Engl. Bot. t.* 158. *Hook. Scot. i. p.* 242. *Engl. Fl. v. iii. p.* 422.

Dry gravelly or chalky pastures, walls, &c. *Fl.* Aug. ♃.—One foot to 1½ foot high; whole plant scabrous, hispid, erect, panicled above and leafy; *flowers* pedunculated, from the axils of their leaves, and terminal. *Leaves* below tapering into a footstalk. *Florets* of the *disk* yellow, of the *ray*, ligulate, purplish. *Pappus* very long and tawny.

3. E. *alpínus*, Linn. (*alpine Flea-bane*); stems with usually only one flower, pappus much shorter than the florets of the ray, leaves lanceolate. *Hook. Scot. i. p.* 242.

α. stems 1—3-flowered, involucre hairy. *E. alpinus, Linn.—Engl. Bot. t.* 464. *Engl. Fl. v. iii. p.* 423.

β. stem single-flowered, calyx woolly. *E. uniflorus, Linn.—Engl. Bot. t.* 2416. *Engl. Fl. v. iii. p.* 423.

Highland mountains, not common, except on the Breadalbane range. α. and β. are both mentioned as growing on Ben Lawers, by *Sir James E. Smith. Fl.* July. ♃.—Hairy or hispid, like the last; but with much longer *leaves* in proportion; 3—5 inches high, simple, with rarely more than one *flower* at the summit. I have never seen the Lapland and arctic state of *E. uniflorus* with the very woolly involucre, upon Ben Lawers, but which, in its extreme state, I yet believe may be traced from *alpinus*. I fear the upright ray of the British *E. uniflorus*, mentioned by Smith, is not to be depended upon.

32. Tussilágo. *Linn.* Colt's-foot.

Involucre formed of a simple row of equal, linear *scales*. *Receptacle* naked. *Flowers* radiant. *Corollas* of the circumference long, linear, numerous; of the disc few. *Pappus* simple. *Scapes* single-flowered.—Name altered from *Tussis*, a *cough*, in the cure of which the plant has been employed.

H. 1. T. *Fárfara*, Linn. (*Colt's-foot*); scape single-flowered imbricated with scales, leaves cordate angular toothed downy beneath. *Engl. Bot. t.* 429. *Hook. Scot. i. p.* 242. *Engl. Fl. v. iii. p.* 425.

Moist and clayey soils, too abundant. *Fl.* March, April, before the leaves. ♃.—*Flowers* yellow; *florets* of the *disk* few. The down of the leaves makes good tinder. The *leaves* themselves have been used medicinally, as an infusion, or smoked like tobacco, for the relief of asthma. Mr. W. Wilson observes that the central tubular florets are barren, those of the circumference generally fertile.

33. Petasítes. *Desf.* Butter-bur.

Nearly *diœceous*. *Involucre* imbricated with two rows of lanceolate *scales*. *Flowers* not radiant. *Pappus* simple. *Scape* many-flowered.—Name, πετασος, a *covering to the head*, or an *umbrella*; from the great size of its foliage.

H. 1. P. *vulgáris*, Desf. (*common Butter-bur*); thyrsus dense oblong, leaves cordate unequally toothed downy beneath, the lobes approximate.—*T. Petasites, Hoppe. Willd.—Hook. Scot. i. p.* 242. *Engl. Fl. v. iii. p.* 425.—a. Flowers sterile, bearing anthers, rarely seed. *T. Petasites, Linn.—Engl. Bot. t.* 431.—b. Flowers fertile, bearing seed, rarely stamens. *T. hybrida, Linn.—Engl. Bot. t.* 430.

Wet meadows, to which it is very injurious, and river-sides. *Fl.* Apr. May, before the leaves. ♃.—*Root* extensively creeping, and thus multiplying the plant. *Leaves* very large. *Flowers* of a pale flesh colour; smaller, more lax, and in a longer thyrsus in the fertile plant.—Mr. W. Wilson, who studies nature deeply, suggested to me the propriety of distinguishing this as a genus from *Tussilago Farfara*, without being aware that it had been already done by Desfontaines and confirmed by Cassini. The early flowering of this plant induces the Swedish farmers to plant it near their Bee-hives. Thus we see in our gardens the bees collected on its affinities, *P. albus* and *fragrans;* at a season when scarcely any other flowers are expanded.

34. Senécio. *Linn.* Groundsel.

Involucre cylindrical, its *scales* linear, equal, with several smaller ones at the base, their tips often brown. *Receptacle* naked. *Flowers* discoid or radiant. *Pappus* simple, sessile.—Name; *senex, an old man.* See *Erigeron.*

* *Flowers without rays.*

1. S. *vulgáris*, Linn. (*common Groundsel*)*;* leaves semiamplexicaul pinnatifid toothed, flowers in clustered corymbs destitute of a ray. *Engl. Bot. t.* 747. *Hook. Scot. i. p.* 243. *Engl. Fl. v. iii. p.* 428.

Waste ground, fields and hedges, abundant. *Fl.* all summer. ⊙.—A span to a foot high. *Flowers* small, yellow.—Birds are fond of the buds and young leaves.

** *Flowers rayed, with the ray rolled back.*

2. S. *viscósus*, Linn. (*stinking Groundsel*)*;* ray revolute, leaves pinnatifid and viscid, scales of the involucre lax hairy, stem branching diffuse. *Engl. Bot. t.* 32. *Hook. Scot. i. p.* 243. *Engl. Fl. v. iii. p.* 429.

Waste ground, especially in a chalky or gravelly soil, in many places. *Fl.* July, Aug. ⊙.—*Stems* 1—2 feet high, much branched and spreading: remarkable for its viscid hairs and fœtid smell.

3. S. *sylváticus*, Linn. (*Mountain Groundsel*)*;* ray revolute, leaves sessile pinnatifid lobed and toothed often eared at the base, outer scales of the involucre very short glabrous, stem erect straight, flowers corymbose. *Engl. Bot. t.* 748. *Hook. Scot. i. p.* 244. *Engl. Fl. v. iii. p.* 430.

β. leaves distinctly eared and amplexicaul at the base. *S. lividus, Linn. Engl. Bot. t.* 2515. *Hook. Scot. i. p.* 243. *Engl. Fl. v. iii. p.* 429.

Dry upland soils, banks and gravelly pastures. *Fl.* July. ⊙.—One foot high. *Leaves* finely divided.—Plant with a disagreeable smell, but not so powerful as *S. viscosus*. The *S. lividus* of Linnæus is a Spanish species, and unknown to me; but, whatever it is, I fear that the plant of *Engl. Bot.* cannot be considered specifically distinct from the present. I form my opinion from Mr. Middleton's original specimens, now before me. Mr. W. Wilson does not think it distinct, nor does Mr. Richmond, (*Nat. Mag. for Mar.* 1830, *p.* 197.) who observes that the green tips of the *calycine scales*, upon which much stress is laid, eventually become brown.

*** *Flowers with patent rays. Leaves pinnatifid.*

H. 4. S. *squálidus*, Linn. (*inelegant Ragwort*); ray spreading its corollas elliptical entire, leaves glabrous pinnatifid with distant oblong and toothed segments. *Engl. Bot. t.* 600. *Engl. Fl. v. iii. p.* 431.

On walls in and about Oxford. Walls and rubbish at Biddeford, Devon, *E. Forster, Esq. Fl.* June—Oct. ⊙.—A most distinct species, but which I had hardly ventured to consider indigenous, till its recent discovery in Devonshire, by Mr. Forster.

H. 5. S. *tenuifólius*, Jacq. (*hoary Ragwort*); ray spreading its corollas oblong, leaves closely pinnatifid their margins somewhat revolute pale and downy beneath, stem erect loosely cottony, all the fruit hairy. *Engl. Bot. t.* 574. *Engl. Fl. v. iii. p.* 432.

Hedges and road-sides, in England, especially in a chalky or gravelly soil. It has lately been found at Woodhall, near Airdrie, Scotland, by *Dr. Graham. Fl.* July, Aug. ♃.—Allied to the following; but with more regular, less divided and less spreading segments to the *leaves*.

H. 6. S. *Jacobæa*, Linn. (*common Ragwort*); ray spreading, leaves lyrate bipinnatifid segments divaricated toothed glabrous, stem erect, fruit glabrous, of the ray hairy. *Engl. Bot. t.* 1130. *Hook. Scot. i. p.* 244. *Engl. Fl. v. iii. p.* 433.

Way-sides and neglected pastures, too plentiful *Fl.* July, Aug. ♃.—*Stems* 2—3 feet high, striated, branched. *Flowers* large, golden-yellow, in *corymbs*.—In Sutherlandshire Dr. Graham finds a *var.* without the ray.

H. 7. S. *aquáticus*, Huds. (*Marsh Ragwort*); ray spreading, leaves lyrate serrated glabrous the lowermost obovate and undivided, involucre hemisphærical, fruit all glabrous. *Engl. Bot. t.* 1131. *Hook. Scot. i. p.* 244. *Engl. Fl. v. iii. p.* 434.

Wet places and by the sides of rivers and ditches. *Fl.* July, Aug. ♃.—*Flowers* larger than the last.

**** *Flowers rayed. Leaves undivided.*

8. S. *paludósus*, Linn. (*great Fen Ragwort*); ray spreading toothed, leaves semiamplexicaul lanceolate sharply serrated somewhat woolly beneath, stem perfectly straight hollow rather woolly, corymbs terminal spreading, bracteas subulate. *Engl. Bot. t.* 650. *Engl. Fl. v. iii. p.* 434.

Rare; Ditches and fens in the east of England: Suffolk, Lincolnshire and Cambridgeshire. *Fl.* June, July. ♃.—*Stem* 5—6 feet high. *Leaves* and *flowers* large, the latter of many linear, toothed *rays.*

9. S. *saracénicus,* Linn. (*broad-leaved Groundsel*); ray spreading nearly entire, leaves lanceolate sessile minutely glanduloso-serrate glabrous, stem erect solid glabrous, corymbs terminal of rather few flowers, bracteas linear-setaceous. *Engl. Bot. t.* 2211. *Hook. Scot. i. p.* 244. *Engl. Fl. v. iii. p.* 435.

Moist meadows and pastures, in several parts of England and Scotland; but very local, and probably it has often escaped from gardens. Woods at Bantry, Ireland, *Mr. Drummond.* *Fl.* July, Aug. ♃.—Three to 5 feet high; habit of the last. *Flowers* much smaller, with broader *florets* of the *circumference.*

35. Aster. *Linn.* Starwort.

Involucre imbricated, the lowermost *scales* spreading (except in *A. Tripolium*). *Receptacle* naked. *Pappus* sessile, simple.—*Florets* of the *disk* yellow, of the *ray* purple or white.—Name: *Aster,* a *star,* which the flowers resemble.

1. A. *Tripólium,* Linn. (*Sea Star-wort*); stem glabrous corymbose, leaves linear-lanceolate fleshy obscurely 3-nerved, scales of the involucre lanceolate membranous obtuse all imbricated. *Engl. Bot. t.* 87. *Hook. Scot. i. p.* 244. *Engl. Fl. v. iii. p.* 436.

Salt marshes, frequent, *Fl.* Aug. Sept. ♃.—One to 2 feet high. The *florets* of the *ray* not unfrequently wanting.

36. Solidágo. *Linn.* Golden-rod.

Involucre closely imbricated. *Receptacle* naked. *Florets* of the *ray* few, (yellow). *Pappus* sessile, simple.—Name; *solidari,* to *unite,* from the vulnerary qualities of the plant.

H. 1. S. *Virgaurea,* Linn. (*common Golden-rod*); cauline leaves lanceolate the lower ones elliptical, racemes panicled erect crowded. *Engl. Bot. t.* 301. *Hook. Scot. i. p.* 245. *Engl. Fl. v. iii. p.* 438.

β. small, with broader radical leaves. *S. cambrica,* Huds.

Woods and thickets. β. in mountainous countries. *Fl.* July—Sept. ♃.—Lower *leaves* broad, stalked; very variable in regard to size, and the more or less compact *inflorescence.* It has been used as a vulnerary and diuretic.

37. Inula. *Linn.* Elecampane.

Involucre imbricated, its *scales* spreading; outer ones, especially, foliaceous. *Anthers* with bristles at their base. *Receptacle* naked. *Pappus* simple. *Flowers* yellow.—Name; said to be the same as *Helenium,* having sprung from the tears of *Helen.*

1. I. *Helénium,* Linn. (*Elecampane*); leaves amplexicaul somewhat toothed ovate wrinkled downy beneath, scales of the involu-

cre ovate downy. *Engl. Bot. t.* 1546. *Hook. Scot. i. p.* 245. *Engl. Fl. v. iii. p.* 440.

Moist pastures, rare; but found in several places in England, Scotland, and Ireland. *Fl.* July, Aug. ♃.—Three to 5 feet high, branched. *Flower* large, terminal, solitary, with many, narrow, tricuspidate, yellow *rays*.

38. Limbárda. *Adans.* Golden-Samphire.

Involucre with imbricated, narrow *scales*. *Anthers* with bristles at the base. *Receptacle* naked. *Pappus* simple, rough.—Named from *Limbarde*, as the plant is called in some parts of France.

H. 1. L. *crithmoídes*, (*golden Samphire*); leaves linear fleshy generally 3-toothed at the extremity. *Limbarda tricuspis, Cass.—Lindl.*—*Inula crithmoides, Linn.—Engl. Bot. t.* 68. *Hook. Scot. i. p.* 245. *Engl. Fl. v. iii. p.* 442.

South and west shores of England and Wales, in salt marshes, and as far north as Galloway. Howth, Ireland, *Mr. J. T. Mackay*. *Fl.* Aug. ♃.—One foot high, a little branched at the summit, each branch bearing a solitary *flower*. In habit very different from the preceding genus, as it is from the following.

39. Pulicária. *Gærtn.* Flea-bane.

Involucre hemisphærical, closely imbricated with narrow scales. *Anthers* with bristles at the base. *Pappus* double; *outer* one short, cup-shaped, membranous, toothed: *inner* long, rough. *Flowers* yellow.—Name; *pulex*, a *flea*, an insect which this plant is supposed to drive away by its powerful smell.

H. 1. P. *dysentérica*, Cass. (*common Flea-bane*); leaves oblong cordate or sagittate and amplexicaul at the base wrinkled downy, stem woolly panicled, scales of the involucre setaceous.—*Lindl. Syn. p.* 143.—*Inula dysenterica, Linn.—Engl. Bot. t.* 1115. *Hook. Scot. i. p.* 246. *Engl. Fl. v. iii. p.* 440.

Moist and watery places, frequent in England and in the county of Dublin: rare in Scotland; Mull of Galloway, *Mr. Maughan*. *Fl.* Aug. ♃.—About 1 foot high. *Flowers* with moderately long *rays*.

H. 2. P. *vulgáris*, Gærtn. (*small Flea-bane*); leaves lanceolate wavy hairy narrow at the base and semiamplexicaul, stem much branched hairy, ray scarcely longer than the disk. *Cass.—Lindl.*—*Inula pulicaris, Linn.—Engl. Bot. t.* 1196. *Engl. Fl. v. iii. p.* 441.

Moist sandy places, especially where water has stood, in England; not found in Scotland or Ireland. *Fl.* Sept. ⊙.

40. Cinerária. *Linn.* Flea-wort.

Involucre cylindrical, of many equal, upright *scales*. *Receptacle* naked. *Fruit* quadrangular. *Pappus* sessile, simple. *Flowers* yellow.—Name; *cineres, ashes,* from the ashen colour of the underside of the leaves in some species.

1. C. *palústris,* Linn. (*Marsh Flea-wort*); shaggy, stem much branched fistulose, leaves broadly lanceolate sinuato-dentate, flowers corymbose. *Engl. Bot. t.* 151. *Engl. Fl. v. iii. p.* 443.

Margins of pools and ditches, chiefly in Norfolk and Cambridgeshire. *Fl.* June, July. ♃.

2. C. *campéstris,* Retz, Willd. (*Field Flea-wort*); woolly, stem simple, root-leaves elliptical nearly entire those of the stem (small) lanceolate, flowers umbellate. *Hook. in Fl. Lond. t.* 75.—*C. integrifolia, With.*—*Engl. Bot. t.* 152. *Engl. Fl. v. iii. p.* 444.—*var.* β. *Linn. Syst. Veg.*—*Jacq.*—*C. alpina,* γ. *Linn. Sp. Pl.*

Chalky downs in the middle and south of England. *Fl.* May, June. ♃.

41. Dorónicum. *Linn.* Leopard's-bane.

Involucre with the *scales* in a double row, equal, longer than the disk. *Receptacle* naked. *Pappus* simple, wanting on the florets of the ray.—Name; δωϱον, a *gift,* and νικη, *victory,* because it was said to have been formerly used to destroy wild beasts.

1. D. *pardaliánches,* Linn. (*great Leopard's-bane*); leaves cordate toothed, the lowermost on long naked petioles, the intermediate with the petioles dilated into two broad semiamplexicaul ears at the base, the uppermost sessile and amplexicaul. *Jacq. Austr. t.* 350. *Hook. Fl. Lond. t.* 88. *Hook. Scot. i. p.* 245. *Engl. Bot. t.* 630? *Engl. Fl. v. iii. p.* 446?

Catton, by Norwich. *Mr. Lindley.* Den of Dupplin and Dalkeith park, Scotland; *Mr. Borrer. Fl.* June, July. ♃.—It would be better perhaps if the genus *Doronicum* were expunged from the British Flora; for it is doubtful if any species is native, and in Mr. Borrer's opinion 3 species have an equal claim to denizenship. I am happy to find that both Mr. Borrer and Mr. Forster agree in considering my Flora Londinensis plant as the true *D. pardalianches* of Linn. according to his description, and, what is of more importance, according to his Herbarium; and it is Jacquin's also. The Essex kind, figured in *Engl. Bot. t.* 630. and *Engl. Fl. v. iii. p.* 446., Mr. Forster thinks is the *D. scorpioides,* Willd.: and probably the *D. austriacum,* Willd., and *Jacq. Austr. t.* 130, may have an equal right to a place in a British Flora. All are cultivated in gardens, and their scorpion-like and creeping *roots,* when thrown out into waste places, take speedy possession of the soil.

H. *

42.+ Béllis. *Linn.* Daisy.

Involucre hemisphærical, simple, its *scales* all equal in length. *Receptacle* naked, conical. *Pappus* none.—Named from *bellus, pretty.* And who is there whether in youth or in age that has not felt the beauty of this "modest crimson-tipped flower?" thus, in France, it is called *Marguerite,* the name of a woman, expressive of beauty, from *margarita,* a pearl.

* D. plantagineum. App. 22.

+ Daisy - blooms almost everywhere but in N. America.

1. B. *perénnis*, Linn. (*common Daisy*); scape naked single-flowered, leaves spathulate obovate crenated. *Engl. Bot. t.* 424. *Hook. Scot. i. p.* 246. *Engl. Fl. v. iii. p.* 447.

Pastures, frequent. *Fl.* from the early spring till the end of autumn. ♃.

43. Chrysánthemum. *Linn.* Ox-eye.

Involucre hemisphærical, imbricated with *scales* whose margins are membranaceous. *Receptacle* naked. *Pappus* none.—Name; χρυσος, *gold*, and ανθος, a *flower*, from the colour of the blossoms in some of the species.

H, 1. C. *Leucánthemum*, Linn. (*great white Ox-eye*); leaves amplexicaul oblong obtuse cut and pinnatifid at the base, radical ones obovate petiolate, stem erect branched. *Engl. Bot. t.* 601. *Hook. Scot. i. p.* 246. *Engl. Fl. v. iii. p.* 449.

Dry pastures, abundant. *Fl.* June, July. ♃.—*Stems* 1—2 feet high, furrowed. *Flowers* large, their *disk* yellow, the *ray* white.

H. 2. C. *ségetum*, Linn. (*Corn Marigold, yellow Ox-eye*); leaves amplexicaul glaucous inciso-serrated above toothed at the base. *Engl. Bot. t.* 540. *Hook. Scot. i. p.* 246. *Engl. Fl. v. iii. p.* 449.

Corn-fields, frequent; rare about Edinburgh. *Fl.* June—Aug. ⊙.—One foot or more high. *Flowers* large, deep yellow.

44. Pýrethrum. *Hall.* Feverfew.

Involucre hemisphærical, imbricated with *scales* whose margins are membranaceous. *Receptacle* naked. *Fruit* crowned with a membranaceous border.—Flowers *with a yellow disk and white ray.*—This genus scarcely differs from the preceding.—Named from its resemblance to the πυρεθρον of Dioscorides, so called from πυρ, *fire*, on account of its acrid roots.

1. P. *Parthénium*, Sm. (*common Feverfew*); leaves petiolate flat bipinnate the segments ovate cut, peduncles branched corymbose, stem erect, involucre hemisphærical downy. *Engl. Bot. t.* 1231. *Hook. Scot. i. p.* 246. *Engl. Fl. v. iii. p.* 451.—*Matricaria Parthenium, Linn.*

Waste places and in hedges. *Fl.* July. ♃.—One foot to 2 feet high, branched. *Disk* of the *flowers* yellow, the *ray* very short, white.—*Plant* bitter and tonic.

H. 2. P. *inodórum*, Sm. (*Corn Feverfew or scentless Mayweed*); leaves sessile bipinnatifid with the segments capillary, stem branched spreading, border of the fruit entire. *Engl. Bot. t.* 676. *Hook. Scot. i. p.* 246. *Engl. Fl. v. iii. p.* 452.—*Chrysanthemum inodorum, Linn.*

Fields and way-sides, common.—*Fl.* Aug.—Oct. ⊙.—*Stem* about 1 foot high. *Flowers* large, upon long, naked peduncles. *Disk* very convex; *ray* large.—*Plant* slightly aromatic.

H. 3. P. *marítimum*, Sm. (*Sea Feverfew*); leaves bipinnatifid the segments linear fleshy pointless, stem diffuse branched, border of the fruit lobed. *Engl. Bot. t.* 971. *Hook. Scot. i. p.* 246. *Engl. Fl. v. iii. p.* 452.—*Matricaria maritima, Linn.*

Sea-coast in many places, especially in Scotland. *Fl.* July. ♃.—It is perennial, and the *flowers* are smaller than those of *P. inodorum;* yet in the opinion of many acute observers it can only be esteemed a maritime variety of it.

45. Matricária. *Linn.* Wild Chamomile.

Involucre hemisphærical or nearly plane, imbricated with *scales* whose margins are membranaceous. *Receptacle* naked, almost cylindrical. *Pappus* none.—Named from its reputed medical virtues.

H. 1. M. *Chamomílla*, Linn. (*wild Chamomile*); leaves glabrous bipinnatifid the segments capillary, involucre nearly plane its scales obtuse. *Engl. Bot. t.* 1232. *Hook. Scot. i. p.* 246. *Engl. Fl. v. iii. p.* 454.

Corn-fields and waste ground, in various places. *Fl.* Aug. ⊙.—*Stem* about 1 foot high, erect and branched. *Flowers* with a conical *disk:* the *rays* very obtuse, truncate and toothed.—This has a bitter taste, and a faint but aromatic smell, not unlike that of the common or true *Chamomile, Anthemis nobilis.*

46. Ánthemis. *Linn.* Chamomile.

Involucre hemisphærical, imbricated with nearly equal *scales*, whose margins are membranaceous. *Receptacle* convex, chaffy. *Fruit* crowned with a membranaceous border or *pappus*.—Name; ανθεμον, a *flower*, from the profusion of its blossoms.

1. A. *marítima*, Linn. (*Sea Chamomile*); "leaves bipinnatifid acute fleshy dotted somewhat hairy, stem prostrate, scales of the receptacle prominent sharp-pointed." *Engl. Bot. t.* 2370. *Engl. Fl. v. iii. p.* 456.

Sea-coast at Sunderland. *Fl.* July. ⊙.

2. A. *nóbilis*, Linn. (*common Chamomile*); leaves bipinnate the segments linear-subulate a little downy, scales of the receptacle membranaceous scarcely longer than the disk. *Engl. Bot. t.* 980. *Hook. Scot. i. p.* 247. *Engl. Fl. v. iii. p.* 456.

Dry gravelly pastures and waste places, in several parts of England. Isles of Cumrae and Bute, Scotland. *Mr. S. Murray. Fl.* Aug. ♃. —*Stems* about a foot long, procumbent and much branched, each branch terminated by a single *flower*, whose *disk* is yellow, at length conical, and *ray* white. The whole plant is intensely bitter, highly aromatic and much used medicinally. Its principal virtues are supposed to reside in the *involucre*, which contains an essential oil.—*Chamomile* is derived from χαμαι, *dwarf*, and μηλον, an *apple*, because the plant smells like *apples*, or rather *quinces*.

3. A. *arvénsis*, Linn. (*Corn Chamomile*); leaves bipinnatifid their segments linear-lanceolate pubescent, receptacle conical its scales lanceolate, fruit crowned with an entire pappus. *Engl. Bot. t.* 602. *Hook. Scot. i. p.* 247. *Engl. Fl. v. iii. p.* 457.

Corn-fields and way-sides, in several places; but very local. Near Edinburgh and Linlithgow, Scotland.—*Fl.* July. ♂—*Stem* upright, much branched, and, as well as the *leaves*, hoary with down; each branch terminated with a large *flower*, whose *disk* is yellow, the *ray* broad and white.

H. 4. A. *Cótula*, Linn. (*stinking Chamomile*); leaves bipinnatifid glabrous their segments subulate, receptacle conical its scales setaceous, pappus none. *Engl. Bot. t.* 1772. *Hook. Scot. i. p.* 247. *Engl. Fl. v. iii. p.* 458.

Waste places, corn-fields and by road-sides. *Fl.* July, Aug. ⊙.—*Stem* a foot or more high, glabrous. *Flowers* solitary, terminal, their *disk* convex, pale yellow; *ray* rather large, white. The whole plant has a fetid smell and is said to blister the hands of those who gather it. When examined with a microscope, it is found to be sprinkled all over with little glands, in which the acrid matter is probably lodged.

5. A. *tinctória*, Linn. (*Ox-eye Chamomile*); leaves bipinnatifid serrated downy beneath, stem erect branched subcorymbose. *Engl. Bot. t.* 1472. *Hook. Scot. i. p.* 247. *Engl. Fl. v. iii. p.* 459.

Banks of the Tees, Durham (*Ray.*). Essex, and near Forfar, Scotland. *Fl.* July, Aug. ♃.—*Stem* a foot or more high, cottony, as are the *scales* of the *involucre*. *Flowers* solitary, large, *entirely* yellow.

47. ACHILLǼA. *Linn.* Yarrow.

Involucre ovate, imbricated. *Receptacle* plane, chaffy. *Florets* of the ray 5—10, roundish, obcordate. *Pappus* none.—Name:—its healing virtues were said to be first discovered by Achilles.

H. 1. A. *Ptármica*, Linn. (*Sneeze-wort Yarrow*); leaves linear-lanceolate acuminate sharply serrated. *Engl. Bot. t.* 757. *Hook. Scot. i. p.* 248. *Engl. Fl. v. iii. p.* 460.

Moist meadows and pastures; especially in mountainous districts. *Fl.* July, Aug. ♃.—*Stem* 1—3 feet high, erect, terminating in a rather large *corymb*, the *disk* as well as *ray* of whose *flowers* is white.—When dried and pulverized, the plant has been employed to excite sneezing.

2. A. *serráta*, Retz? (*serrated Yarrow*); "leaves linear-lanceolate sessile downy deeply-serrated laciniated at the base, flowers almost simply corymbose." *Engl. Bot. t.* 461. *Engl. Fl. v. iii. p.* 461.

Near Matlock, Derbyshire. *Fl.* Aug. ♃.—Habit of the last, with smaller, buff-coloured *flowers*, and much more deeply serrated *leaves*, especially at the base. Sprengel makes it the *A. decolorans* of Schrader, and gives England as the only station for it.

H. 3. A. *Millefólium*, Linn. (*common Yarrow or Milfoil*); leaves bipinnate slightly hairy their segments linear toothed acute, stems furrowed. *Engl. Bot. t.* 758. *Hook. Scot. i. p.* 248. *Engl. Fl. v. iii. p.* 462.

Pastures and way-sides, frequent. *Fl.* all summer. ♃.—*Flowers* small, white, or sometimes rose-coloured. The quality of this plant is highly astringent, and the Highlanders are said to make an ointment of it, which dries and heals wounds. its leaves [illegible]

4. A. *tomentósa*, Linn. (*woolly yellow Milfoil or Yarrow*); leaves bipinnatifid woolly the segments crowded linear acute, corymbs repeatedly compound. *Engl. Bot. t.* 2532. *Hook. Scot. i. p.* 248. *Engl. Fl. v. iii. p.* 462.

Dry hilly pastures, in Scotland. Spittle-hill, north-west of Balvie, Dumbartonshire; and near Paisley. Ireland, (*Engl. Bot*) *Fl.* Aug. ♃.—A span or rather more in height. Readily recognised by its small size, downy *leaves*, and much branched *corymbs* of yellow *flowers*.

ORD. III. FRUSTRANEA.

Florets of the disk perfect and fertile; those of the circumference neuter. (*Part of* Cinarocephalæ, *Juss*).

48. CENTAUREA. *Linn.* Knapweed, Blue-bottle and Star-thistle.

Involucre imbricated. *Receptacle* bristly. *Pappus* simple or none. *Corollas* of the *ray* funnel-shaped, irregular, longer than those of the *disk*.—Name: with this plant it is said the *Centaur* Chiron cured himself of a wound received in the foot from Hercules.

1. C. *Jácea*, Linn. (*brown radiant Knapweed*); scales of the involucre scariose torn, the outer pinnatifid, leaves linear-lanceolate the lower ones broader and toothed, flowers radiant, pappus very short in a single row. *Engl. Bot. t.* 1678. *Hook. Scot. i. p.* 248. *Engl. Fl. v. iii. p.* 465.

Hedges and waste places; Sussex. Frequent in Angus-shire. Near Belfast, Ireland, *Mr. Templeton. Fl.* Aug. Sept. ♃.—*Lower leaves* obovato-lanceolate, petioled, toothed, the *upper* ones entire, sessile. *Scales* of the *involucre* pale brown, shining, the outer ones deeply pinnatifid, the inner or uppermost torn; in which respects it differs strikingly from *C. nigra*. *Florets* very numerous, spreading, purple.

H. 2. C. *nígra*, Linn. (*black Knapweed*); scales of the involucre ovate fringed with capillary teeth, lower leaves angular lyrate, upper ones lanceolate, ray wanting, pappus very short tufted. *Engl. Bot. t.* 278. *Hook. Scot. i. p.* 248. *Engl. Fl. v. iii. p.* 465.

Meadows and pastures, frequent.—*Fl.* June—Aug. ♃.—*Stem* 2—3 feet high. *Leaves* scabrous. *Scales* of the *involucre* almost black, the teeth brown. *Florets* purple, numerous, all fertile.

H. 3. C. *Cyánus*, Linn. (*Corn Blue-bottle*); scales of the involucre serrated, leaves linear entire the lowermost toothed. *Engl. Bot. t.* 277. *Hook. Scot. i. p.* 249. *Engl. Fl. v. iii. p.* 466.

Corn-fields, frequent. *Fl.* July, Aug. ⊙.—Two to 3 feet high, covered with a loose, cottony down, especially on the *stems* and the under-sides of the *leaves*. *Florets* of the *disk* small, purple; those of the *ray* few, larger, bright blue, spreading. *Scales* of the *involucre* greenish, the margin brown.

H. 4. C. *Scabiósa*, Linn. (*greater Knapweed*); scales of the involucre ciliated ovate downy, leaves pinnatifid roughish the segments lanceolate acute. *Engl. Bot. t.* 56. *Hook. Scot. i. p.* 249. *Engl. Fl. v. iii. p.* 467.

Barren pastures, corn-fields, and road-sides. *Fl.* July, Aug. ♃.—Two—3 feet high, erect, much branched. *Involucres* globose, very large, their *scales* cottony, almost black, the fringe pale.—A *var.* has been found in Scotland, by *Mr. D. Don*, with the *leaves* less deeply divided and the *radical* ones very large; probably the *S. coriacea* of Willdenow.

5. C. *Isnárdi*, Linn. (*Jersey Star-thistle*); scales of the involucre with palmated spines, leaves somewhat lyrate and scabrous toothed slightly amplexicaul, flowers terminal solitary with one or more leaves at the base. *Engl. Bot. t.* 2256. *Engl. Fl. v. iii. p.* 468.

Pastures in Jersey. *Fl.* July, Aug. ♃.

6. C. *Calcítrapa*, Linn. (*common Star-thistle*); flowers sessile lateral, scales of the involucre with a long broad spine spinulose at their base, stem divaricated, leaves unequally pinnatifid spinuloso-dentate.—*Engl. Bot. t.* 125. *Engl. Fl. v. iii. p.* 468.

Gravelly, sandy, and waste places, in the middle and south of England; especially near the sea. *Fl.* July, Aug. ⊙.—*Flowers* purple.—The specific name is *Caltrops* (Latinized), an instrument of war, with long points.

H. 7. C. *solstitiális*, Linn. (*yellow Star-thistle, St. Barnaby's thistle*); flowers terminal solitary, scales of the involucre with a long slender spine palmato-spinose at the base, stem winged from the decurrent bases of the lanceolate unarmed leaves, radical leaves lyrato-pinnatifid. *Engl. Bot. t.* 243. *Engl. Fl. v. iii. p.* 49.

Fields and waste places, occasionally seen, principally in the East and South of England, and near Dublin; but probably imported, as *Prof. Henslow* says it certainly is at Dartford, Kent. *Fl.* July—Sept. ⊙.—*Flowers* yellow, as well as the slender, needle-like *spines* of eth *involucre*.

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CLASS XX. GYNANDRIA.

Stamens situated upon the style or column, above the germen.

ORD. I. MONANDRIA. 1 *Stamen.* (*All belong to the Nat. Ord.* ORCHIDEÆ.)*

* *Anthers of 2 distinct, vertical cells, fixed to the top of the column, immediately above the stigma. Pollen-mass stalked, composed of grains which cohere elastically, having a gland at the base of the stalk.* Gen. 1—6.

+ 1. ORCHIS. *Linn.* Orchis.

Flower ringent. *Lip* spurred. {*Glands* or disks of the stalks of the *pollen-mass* contained in a common little pouch. rostellum—Name; an ancient appellation of the plant.

* *Tubers 2, undivided.*

H. 1. O. *Mório*, Linn. (*green-winged Meadow Orchis*); lip 3-lobed somewhat crenate the middle lobe emarginate, calyx-leaves ascending ribbed connivent enclosing the two lateral petals, spur ascending blunt rather shorter than the germen. *Engl. Bot. t.* 2059. *Hook. in Curt. Fl. Lond. ed.* 2, *cum Ic. Hook. Scot. i. p.* 250. *Engl. Fl. v. iv. p.* 11.

Meadows and pastures. "Frequent in Scotland;" *Lightf.:* but I never saw native Scottish specimens, and Mr. Arnott doubts if it has ever been found there. *Fl.* June. ♃.—*Stem* from a span to a foot high. *Flowers* few, in a lax *spike*. *Calyx* purplish-green, forming a sort of helmet over the rest of the flower. *Lip* purple, pale in the middle, with purple spots.

H. 2. O. *máscula*, Linn. (*early purple Orchis*); lip 3-lobed somewhat crenate the middle lobe emarginate, two lateral calyx-leaves reflexed upwards, spur obtuse rather longer than the germen.

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* In this beautiful tribe, the British Genera have their *roots* often tuberous; the *stems* herbaceous; the *leaves* striated, sheathing at the base. The *flowers* have 6 divisions, of which it is convenient, as Sir Jas. E. Smith has done, if not correct, to call the 3 outer a *calyx*, though they be often coloured, the 3 inner a *corolla*; of this latter the lower *petal* (so situated by the twisting of the inferior *germen*), is mostly larger, differently shaped from the rest and called the *lip*. The style is represented by a *column* more or less elongated, which bears the *stigma*, on which, and frequently at the extremity, the *anther* is fixed. The *cells* of the anther contain *pollen* which is either pulverulent, loosely collected into a mass; or composed of grains elastically cohering, fixed to a *stalk*; or of a definite number of waxy *masses*.—I have followed the general arrangement of Mr. Brown, as by far the simplest and best of any I am acquainted with.

+ The nectaries do not contain nectar, but there is a copious fluid lodged between the inner & outer membranes of the spur. C. Darwin.

Engl. Bot. t. 631. *Hook. in Curt. Fl. Lond. ed.* 2, *cum Ic. Hook. Scot. i. p.* 250. *Engl. Fl. v. iv. p.* 11.

Woods and pastures, frequent. *Fl.* June. ♃.—*Stem* 1 foot high. *Leaves* generally marked with dark purple spots. *Flowers* in a lax oblong *spike*, purple; the centre of the *lip* whitish at the base and spotted, sometimes altogether white.

H. 3. O. *ustuláta*, Linn. (*dwarf dark-winged Orchis*); lip tripartite marked with discoloured raised spots, segments narrow the middle one bifid, calyx-leaves connivent acute including the two lateral petals, spur very short, bracteas as long as the germen. *Engl. Bot. t.* 18. *Hook. in Curt. Fl. Lond. ed.* 2, *cum Ic. Engl. Fl. v. iv. p.* 12.

Dry chalky pastures, in England. *Fl.* June. ♃.—Four or 5 inches high. *Lip* white, with purple, raised, not rough, spots, while the rest of the flower *is* of a dark, dingy purple. *Calyx* forming a sharp helmet-like covering, within which are the two, small, linear, lateral *petals*. *Leaves* lanceolate, acute.

H. 4. O. *fúsca*, Jacq. (*great brown-winged Orchis*); lip deeply 3-lobed with raised rough dark points, lateral lobes linear-oblong, intermediate one large obcordate crenate and emarginate with a point in the sinus, calyx-leaves rather obtuse connivent including the two lateral petals, spur obtuse about $\frac{1}{2}$ as long as the germen. *Hook. in Curt. Fl. Lond. ed.* 2, *cum Ic. Engl. Fl. v. iv. p.* 13.—*O. militaris*, *Engl. Bot. t.* 16.

Chalky pastures and borders of woods, in Kent. *Fl.* May. ♃.—*Stem* 1—2 feet high. *Leaves* ovato-oblong, obtuse. *Flowers* forming a handsome *spike*, with variegated purple *petals*; the *helmet* of a dark greenish purple, the *lip* much paler.

5. O. *militáris*, Linn. (*Military Orchis*); lip deeply 3-lobed with raised rough dark points, the two lateral lobes linear oblong short, middle lobes dilated at the extremity and deeply emarginate with an intermediate point, calyx-leaves converging acuminate including the 2 lateral petals, spur obtuse about half as long as the germen. *Sm. Fl. Brit. p.* 922. *Jacq. Ic. Rar. v. iv. t.* 598. *Engl. Fl. v. iv. p.* 14.

Chalky hills, principally about Reading, on both sides of the Thames. *Fl.* May. ♃.—Intermediate, in the structure of its *flowers*, between the preceding and the following; but much allied to the former. *Helmet* pale ash-coloured. *Lip* deep purple, white in the middle. *Leaves* oblong, rather acute.

6. O *tephrosánthos*, Vill. (*Monkey Orchis*); lip tripartite with small rough raised dark spots, the segments linear, intermediate one deeply bifid with a point in the sinus, calyx-leaves acuminate connivent including the two lateral petals, spur twice as short as the germen, bracteas very small. *Bichen. in Linn. Trans.*

v. xii. p. 33. *Hook. in Fl. Lond. N. S. t.* 82. *Engl. Fl. v. iv. p.* 16.—*O. militaris*, *β. Engl. Bot. t.* 1873.—ε. *Linn.*

Chalk hills in Berkshire, Oxfordshire and Kent. *Fl.* May. ♃.—A beautiful and curious species, smaller and slenderer than the last. *Spike* short. *Flowers* pale purple, spotted. Segments of the *lip* narrow, deep purple, and covered with minute crystalline points.—Among the specimens communicated to me by Mr. Bicheno, were some monstrous flowers, having two opposite horizontal *lips*, two *spurs*, and only 2 opposite *calyx-leaves*.

7. O. *hircína*, Scop. (*Lizard Orchis*); lip 3-partite waved at the base, segments linear, intermediate one twisted exceedingly long bifid, calyx-leaves concavo-connivent including the small lateral linear petals, spur very short. *Hook. in Fl. Lond. N. S. t.* 96. *Engl. Fl. v. iv. p.* 17.—*Satyrium hircinum, Linn.*—*Engl. Bot. t.* 24.—*Loroglossum hircinum, Rich.*

Chalk hills and bushy places, in Kent and Surry. *Fl.* July. ♃.—A most remarkable plant, which cannot be confounded with any other. The smell of the *flowers* is detestable and similar to that of a *Goat*, whence its Latin specific name.

H. 8. O. *pyramidális*, Linn. (*pyramidal Orchis*); lip with 3 equal entire lobes and + two protuberances at the base above, calyx-leaves spreading acuminate, spur subulato-filiform longer than the germen, stalks of the pollen-masses united by one gland. *Engl. Bot. t.* 110. *Hook. in Fl. Lond. N. S. t.* 106. *Hook. Scot. i. p.* 251. *Engl. Fl. v. iv. p.* 10.—*Anacamptis pyramidalis, Rich.*—*Lindl.*

+ guiding ridges C.D.

Pastures and waste ground, in a chalky or clayey soil. Isle of Colonsay, Scotland (*Lightf.*) *Fl.* July. ♃.—*Leaves* very acuminate. *Flowers* of a delicate rose-purple, spirally aranged in a close, broad and ovate *spike*, sometimes white. often produces flowers with no nectary or a short & imperfect one C.D

** *Tubers* 2, *palmate.*

H. 9. O. *latifólia*, Linn. (*Marsh Orchis*); lip slightly 3-lobed its sides reflexed crenate, calyx-leaves patent, two lateral petals connivent, spur cylindrical shorter than the germen, bracteas longer than the flower. *Engl. Bot. t.* 2308. *Hook. in Curt. Fl. Lond. ed.* 2, *cum Ic. Hook. Scot. i. p.* 251. *Engl. Fl. v. iv. p.* 21.

Marshes and moist meadows, common. *Fl.* June. ♃.—*Flowers* varying from a pale rose colour to deep purple, the *lip* dotted and marked with purple lines; *white* on the sands of Barrie, near Dundee, (*Mr. Drummond*). The species is known by its slightly-lobed *lip*, its broad, nearly erect, and acuminated *leaves*, and, especially, by the *bracteas*, which are leafy and longer than the *germen.*

H. 10. O. *maculáta*, Linn. (*spotted palmate Orchis*); lip plane 3-lobed sometimes obscurely so, calyx-leaves spreading, two lateral petals connivent, spur cylindrical shorter than, and bracteas as long as, the germen. *Engl. Bot. t.* 632. *Hook. in Fl. Lond. N. S. t.* 112. *Hook. Scot. i. p.* 251. *Engl. Fl. v. iv. p.* 22.

Pastures and heaths, frequent. *Fl.* June, July. ♃.—A foot high, slender. *Leaves* distant, spotted with purple. *Flowers* white or pale purple, more or less spotted and streaked, especially the *lip*. Its generally deeply lobed *lip* having the central lobe the longest and ovate, together with the small, subulate *bracteas*, constitute in themselves sufficient marks of distinction between this and *O. latifolia.*

2. GYMNADÉNIA. *Br.* Gymnadenia.

Lip spurred. *Glands* of the stalks of the *pollen-masses* naked, narrow, ap-shaped approximated.—Name; χυμνος, *naked*, and αδηv, a *gland*, one of the essential characters of this Genus.

H. 1. G. *conópsea*, Br. (*fragrant Gymnadenia*). *Br. in Hort. Kew, ed.* 2. *v. v. p.* 191. *Hook. in Fl. Lond. N. S. t.* 186. *Hook. Scot. i. p.* 251.—*Orchis conopsea, Linn.—Engl. Bot. t.* 10. *Engl. Fl. v. iv. p.* 23.

Dry pastures and heaths, in mountainous countries, especially in Scotland, most abundant; scenting the atmosphere with its fragrance. *Fl.* June, Aug. ♃.—*Stems* 1 foot high. *Tubers* palmate. *Leaves* linear-lanceolate, keeled. *Flowers* in an ovato-oblong, rather dense *spike*, rose-purple. *Lip* 3-lobed, not spotted, the lobes equal, entire, rounded. The 2 lateral *calyx-leaves* spreading, their margins revolute. Two lateral *petals* connivent. *Spur* filiform, twice as long as the *germen*. The two *cells* of the *anthers* are perforated at the base, through which the naked, large and oblong *glands* of the *stalks* of the *pollen-masses* appear.—The character of this genus is very near the following, but its habit is different. nectary contains nectar. C.D.

3. HABENÁRIA. *Br.* Habenaria. or Peristylus

Flower ringent. *Lip* spurred. *Glands* of the stalks of the *pollen-masses* naked, distant.—Name; *habena*, a *thong* or *lash*, which the spur sometimes resembles.
+ a minute pouch. C.D.

H. 1. H. *víridis*, Br. (*green Habenaria*); spur very short two-lobed, lip linear bifid with an intermediate tooth, bracteas much longer than the flowers, tubers palmate. *Br. in Hort. Kew, ed.* 2. *v. v. p.* 192. *Hook. in Curt. Fl. Lond. ed.* 2, *cum Ic. Hook. Scot. i. p.* 252.—*Orchis viridis, Sm.—Engl. Fl. v. iv. p.* 20.—*Satyrium viride, Linn.—Engl. Bot. t.* 94. Nectary contains nectar. C.D.

Dry hilly pastures, not unfrequent. *Fl.* June, July. ♃.—*Stems* 6—8 inches high; lower *leaves* nearly ovate, obtuse; *calyx* and lateral *petals* connivent and forming a helmet, green. *Lip* small, greenish-brown.

H. 2. H. *álbida*, Br. (*small white Habenaria*); spur obtuse much shorter than the germen, lip 3-cleft the segments acute, middle one the longest, calyx-leaves and lateral petals nearly equal ovate, concave. *Br. in Hort. Kew, ed.* 2. *v. v. p.* 193. *Hook. in Fl. Lond. N. S. t.* 107. *Hook. Scot. i. p.* 252.—*Orchis albida, Sm.—Engl. Fl. v. iv. p.* 18.—*Satyrium albidum, Linn.—Engl. Bot. t.* 505.

Mountain pastures, not unfrequent. *Fl.* June, July. ♃.—About a span high. *Leaves* oblong, striated, lower ones obtuse. *Flowers* white, small, fragrant; *lip* scarcely longer than the *calyx*, deflexed.

H. 3. H. *bifólia*, Br. (*Butterfly Habenaria*); spur filiform twice as long as the germen, lip linear entire, calyx-leaves and lateral petals connivent, radical leaves 2 oblongo-obovate attenuated at the base. *Br. in Hort. Kew, ed. 2. v. v. p.* 193. *Hook. in Curt. Fl. Lond. ed. 2. cum Ic.—Orchis bifolia, Linn.—Engl. Bot. t.* 22. *Engl. Fl. v. iv. p.* 9. Nectary contains nectar . C. D.

Moist copses and pastures, frequent. *Fl.* June. ♃.—*Tubers* undivided, tapering. *Stem* 1 to 1½ foot high, with 2, rarely 3, large radical *leaves*, and 3—4, very small, cauline ones. *Spike* long, of numerous, rather large, yellowish-white, very fragrant *flowers*. The *bases* of the *cells* of the *anther* are very distant from each other.—This is the genus *Platanthera* of Richard.

*

4. Áceras. *Br.* Man-orchis.

Flower ringent. *Lip* without a spur. *Glands* of the stalks of the *pollen-masses* contained in a common little pouch.—Name; α, *without*, and κερας, *a horn*; in allusion to the absence of a spur.

H. 1. A. *anthropóphora*, Br. (*green Man-orchis*); lip longer than the germen. *Br. in Hort. Kew, ed.* 2. *v. v. p.* 191. *Hook. in Curt. Fl. Lond. ed.* 2, *cum Ic. Engl. Fl. v. iv. p.* 25.—*Ophrys anthropophora, Linn.—Engl. Bot. t.* 29.

Dry chalky or clayey pastures, in several parts of Kent, Norfolk and Suffolk. *Fl.* June. ♃.—*Tubers* ovate. *Stem* about a foot high. *Leaves* mostly near the root. *Flowers* in a long *spike*. *Lip* tripartite, with linear segments, yellowish with a red or brown margin, the middle lobe broadish, deeply bifid. *Helmet* green, composed of the 3, connivent, concave *calyx-leaves*, including the 2, small, linear-lanceolate, obtuse lateral *petals*.

5. Hermínium. *Br.* Musk-Orchis.

Perianth erecto-patent. *Lip* without a spur. *Glands* of the stalks of the *pollen-masses* naked, distinct.—Name, probably derived from ἑρμιν, ἑρμινος, *fulcrum tori*, in allusion to the thick, though short, column of the flower, or to the stem or scape of the flowers.
a strip of membrane answers to the pouch of Orchis . C.

H. 1. H. *monórchis*, Br. (*green musk-orchis*); radical leaves 2 lanceolate. *Br. in Hort. Kew, ed.* 2. *v. v. p.* 191. *Hook. in Fl. Lond. N. S. t.* 138. *Engl. Fl. v. iv. p.* 27.—*Ophrys monorchis, Linn.—Engl. Bot. t.* 71.

Chalky pastures, principally in the east and south-east of England. *Fl.* June, July. ♃.—*Tubers* 2, very unequal. 4—6 inches high slender; with 2 lanceolato-oblong *leaves* at the base, and a small one on the *stem*, or *scape*. *Flowers* small, green, spiked. *Perianth* bent down from the top of the erect *germen*. *Cal.* of 3 equal, ovate *leaves*, shorter than the *corolla*. Lateral *petals* ovate, acuminate, undivided,

* H. chlorantha. App. 23.
nectary with nectar

lower one or *lip*, 3-fid, the two side-lobes rather small, intermediate one much longer, linear. *Pollen-mass* on a short footstalk, with a large white gland.

6. Óphrys. *Linn.* Ophrys.

Perianth somewhat patent. *Lip* without a spur. *Glands* of the stalks of the *pollen-masses* each in a distinct little pouch.—Name: οφρυς, the *eye-brow*, which Pliny says this plant was used to blacken. The flowers of all the species are beautiful and curious, and more or less aptly resemble certain insects.

H. 1. O. *apífera*, Huds. (*Bee Ophrys*); lip tumid trifid and reflexed at the extremity, the intermediate lobe trifid, its middle segment longest subulate, anther elongated with a hooked point. *Engl. Bot. t.* 65. *Engl. Fl. v. iv. p.* 30. *Hook. in Curt. Fl. Lond. ed.* 2, *cum Ic.*—*O. insectifera*, ι. *Linn.* fertilizes itself. C. D.

Chalky and clayey soils in various parts of England, in pastures and pits. *Fl.* July, ♃.—*Flowers* large. *Calyx* purplish or greenish white: lateral *petals* oblong, very small, of the same colour. *Lip* velvety or silky, of a rich brown variegated with yellow.

H. 2. O. *arachnítes*, Willd. (*late Spider Ophrys*); "lip longer than the calyx dilated somewhat tumid with five shallow inflexed marginal lobes, the terminal one flattened, calyx coloured, column (anther) with a hooked point, petals deltoid downy." *Engl. Fl. v. iv. p.* 273. *G. E. Smith in Engl. Bot. Suppl. t.* 2596:—*in Pl. of South Kent*, *p.* 56.

Chalky downs of South Kent, between Folkstone and Sittingbourne, *Mr. G. E. Smith*. *Fl.* May, June. ♃.—I am indebted to Mr. Winterbottom for authentic specimens of this, so beautifully dried as well to exhibit the essential characters of the species. Mr. G. E. Smith speaks of it as allied to *O. apifera*, "with which, and probably *O. fucifera*, it forms frequent hybrids. The essential distinctions are to be sought in the position of the lobe at the base (extremity?) of the lower *lip*, which is never recurved; in the more or less deltoid form of the purplish or green *petals*; in the more bent and short, as well as paler *calyx-leaves*; and in the proportion borne to them by the *lip*, which is either equal or longer, and which presents in the true plant a nearly entire margin, and a more obvious shade of green in the various lines and spots upon its dull or intense brown disk."

H. 3. O. *aranífera*, Huds. (*Spider Ophrys*); lip tumid clothed with short dense hairs 3-lobed, middle lobe large emarginate, anther acute. *Engl. Bot. t.* 65. *Hook. in Curt. Fl. Lond. ed.* 2, *cum Ic. Engl. Fl. v. iv. p.* 31.

Chalky and clayey pastures and pits. *Fl.* Apr. May. ♃.—*Lip* shorter and broader than in *O. apifera*; its colour deep brown, with paler lines not unfrequently resembling the Greek letter π. *Calyx* green. rare

4. O. *fucífera*, Sm. (*Drone Ophrys*); lip longer than the calyx

obovate hairy undivided with a spreading wavy margin, column bluntly pointed incurved, petals roughish ovate at the base." *Engl. Fl. v. iv. p.* 32.

Kent; *Mr. E. Barnard* and *Mr. T. F. Forster. Fl.* May, June. ♃.—I have never had an opportunity of seeing this new *Ophrys* of Sir J. E. Smith.

H. 5. O. *muscífera*, Huds. (*Fly Ophrys*); lip oblong 3-fid middle segments larger 2-lobed, lateral petals filiform, anther short obtuse. *Engl. Bot. t.* 64. *Hook. in Curt. Fl. Lond. ed.* 2, *cum Ic. Engl. Fl. v. iv. p.* 29.

Chalky and clayey pastures in England, abundant in many parts of Norfolk, Suffolk, and Kent. *Fl.* June. ♃.—Well distinguished from all the preceding by its very slender, lateral *petals*, which resemble the antennæ of an insect, and its narrow *lip*, 2-lobed at the extremity, and having a broad pale bluish spot in its centre.

** *Anther parallel with the stigma. Pollen-masses farinaceous or composed of angular grains, fixed to the apex of the stigma, not stalked.* Gen. 7—10.

7. GOODYÉRA. *Br.* Goodyera.

Perianth converging, the two lateral *calyx-leaves* including the gibbous base of the *lip* which is entire at the extremity. *Column* free. *Pollen* angled.—Named in compliment to *Mr. John Goodyer*, a Hampshire Botanist of the time of Gerarde.

H. 1. G. *répens*, Br. (*creeping Goodyera*); lower leaves ovate petiolate, calyx-leaves, petals and lip ovato-lanceolate, root creeping. *Br. in Hort. Kew, ed.* 2. *v. v. p.* 198. *Hook. Scot. i. p.* 253. *Hook. in Fl. Lond. N. S. t.* 144. *Engl. Fl. v. iv. p.* 33.—*Satyrium repens, Linn.*—*Engl. Bot. t.* 289.

Old natural forests in the north, and especially the North Highlands of Scotland. *Fl.* Aug. ♃.—*Leaves* mostly radical. *Stem* a span high, bearing bracteiform *leaves. Flowers* small, white. *Column* very short. *Pollen-masses* broadly oval, sessile, composed of large granules, eventually fixed to the top of the *stigma* and falling away with a gland-like portion of it.

8. NEÓTTIA. *Jacq.* Lady's Tresses.

Perianth converging, two lateral *calyx-leaves* including the base of the beardless *lip. Column* wingless. *Pollen* farinaceous. *Br.*—Name; νεοττια, a *Bird's nest*, formerly applied by Dodonæus, and even by Linnæus, to our *Listera Nidus-Avis*, on account of its densely tufted fibres; but subsequently abandoned. It has since been chosen by Jacquin for the present genus, which is sanctioned by the high authority of Swartz, Willdenow, Smith, and Brown. It is *Spiranthes* of Richard. generally fertilized by humble-bees. C.D.

1. N. *spirális*, Rich. (*fragrant Lady's Tresses*); root-leaves

oblong subpetiolate, spike twisted unilateral, lip oblong. *Sm.—Hook. in Curt. Fl. Lond. ed.* 2, *cum Ic. Engl. Fl. v. iv. p.* 35.—*Ophrys spiralis, Linn.—Engl. Bot. t.* 541.

Dry hilly pastures in various parts of England, in a chalky or gravelly soil. *Fl.* Aug. Sept. ♃.—*Tubers* oblong, 3—4. *Stem* 4—6 inches high, rather bracteated than leafy. *Flowers* singularly spiral on the stalk, greenish-white. Upper *calyx-leaf* and 2 *inner petals* combined. *Lip* longer than the rest of the flower, oblong, broader and crenate at the apex. *Stigma* and *anther* both acuminate.

2. N. *gemmípara*, Sm. (*proliferous Lady's Tresses*); "leaves lanceolate as tall as the stalk, spike 3-ranked twisted, bracteas glabrous." *Engl. Fl. v. iv. p.* 36.

Marshes near Bantry Bay, County of Cork, *Mr. James Drummond. Fl.* July. ♃.—Nearly allied to the last, judging from the description, for I have seen no specimens.

9. LISTÉRA. *Br.* Bird's-nest or Twayblade.

Perianth irregular. *Lip* 2-lobed. *Column* wingless. *Anther* fixed by its base. *Pollen* farinaceous. *Br.*—Name given in honour of *Dr. Martin Lister*, an eminent Naturalist.

generally
fertilized
by small
Hymenopte
C.D.

H. 1. L. *ováta*, Br. (*common Twayblade*); stem with only a pair of ovato-elliptical opposite leaves, column of fructification with a crest in which the anther is placed. *Br. in Hort. Kew, ed.* 2. *v. v. p.* 201. *Hook. in Curt. Fl. Lond. ed.* 2, *cum Ic. Hook. Scot. i. p.* 253. *Engl. Fl. v. iv. p.* 37.—*Ophrys ovata, Engl. Bot. t.* 1548.

Woods and moist pastures, frequent. *Fl.* June. ♃.—One foot high. *Leaves* striated. *Flowers* distant upon the *spike*, yellowish-green. *Calyx-segments* ovate; two lateral *petals* linear-oblong; *lip* long, bifid, without any teeth at the base. *Bracteas* very short.

H. 2. L. *cordáta*, Br. (*heart-leaved Twayblade*); stem with only 2 cordate opposite leaves, column without any crest, lip with a tooth on each side at the base. *Br. in Hort. Kew, ed.* 2. *v. v. p.* 201. *Hook. Scot. i. p.* 253. *Hook. in Fl. Lond. N. S. t.* 143. *Engl. Fl. v. iv. p.* 38.—*Ophrys cordata, Linn.—Engl. Bot. t.* 358.

Sides of mountains in heathy spots, in the north of England and Scotland. *Fl.* July, Aug. ♃.—*Root* a few long fleshy fibres. *Stems* 3—5 inches high. *Flowers* few, very small, spiked, greenish-brown. *Leaves* of the *perianth* somewhat spreading, those of the *calyx* ovate. Lateral *petals* linear, oblong. *Lip* pendent, linear.

H. 3. L. *Nidus-Avis*, Hook. (*common Bird's-nest*); stems with sheathing scales leafless, column without any crest, lip linear-oblong toothless at the base. *Hook. in Fl. Lond. N. S. t.* 58. *Hook. Scot. i. p.* 253. *Engl. Fl. v. iv. p.* 38.—*Ophrys Nidus-Avis, Linn.—Engl. Bot. t.* 48.

Shady woods in many parts of England and Scotland. *Fl.* May, June. ♃.—*Roots* of many short, thick, densely aggregated, fleshy fibres. *Stem* 1 foot high. *Flowers* spiked, of a dingy brown. *Calyx-leaves* and

H. Neottia æstivalis

lateral *petals* oblong-oval, nearly equal. Lobes of the *lip* spreading. This can scarcely be generically distinguished from the preceding.

*** *Anther terminal, persistent. Pollen-masses pulverulent or composed of angular granules, eventually fixed to the back of the stigma.* Gen. 10.

10. EPIPÁCTIS. *Br.* Helleborine.

Lip very concave at the base, the extremity undivided or 3-lobed, the middle lobe large, and as it were, jointed. *Pollen* farinaceous. *Br.*—Name, given to some kind of *Hellebore* by the Greeks.

H. 1. E. *latifólia*, Sw. (*broad-leaved Helleborine*); leaves broadly ovate amplexicaul, perianth connivent, lower bracteas longer than the drooping flowers, lip 3-lobed, middle lobe roundish shortly acuminated. *Br. in Hort. Kew, ed.* 2. *v. v. p.* 202. *Hook. in Fl. Lond. N. S. t.* 102. *Hook. Scot. i. p.* 254. *Engl. Fl. v. iv. p.* 40. —*Serapias latifolia, Linn.—Engl. Bot. t.* 269.

Woods in mountainous countries, not unfrequent. *Fl.* July, Aug. ♃.—*Root* creeping, with long fibres, as in the following species. *Stem* 1—3 feet high, upper *leaves* lanceolate. *Flowers* in a very long, lax *spike*, greenish-purple, but varying exceedingly in intensity, sometimes dark purple, when it becomes the β. of Smith and I should fear his *E. purpurata* also.

2. E. *purpuráta*, Sm. (*purple-leaved Helleborine*); "leaves ovato-lanceolate, bracteas linear all twice as long as the flowers, lip shorter than the calyx entire, germen downy." *Engl. Fl. v. iv. p.* 42.

"Parasitical on the stump of a Maple in Worcestershire, *Rev. Dr. Abbot.*" *Fl.* June. ♃.

H. 3. E. *palústris*, Sw. (*Marsh Helleborine*); leaves lanceolate, perianth patent, bracteas mostly shorter than the slightly drooping flowers, lip 3-lobed, middle lobe oval crenate retuse longer than the rest of the perianth. *Br. in Hort. Kew, ed.* 2. *v. v. p.* 202. *Hook. in Fl. Lond. N. S. t.* 89. *Hook. Scot. i. p.* 254. *Engl. Fl. v. iv. p.* 42.—*Serapias palustris, Scop.—Engl. Bot. t.* 270.— *S. longifolia, Linn.*

Moist and marshy places, especially in the vicinity of chalk. *Fl.* July. ♃.—*Stem* 1 foot high, purplish above. *Calyx* purple-green; lateral *petals* and *lip* white, with rose-coloured streaks at the base.

Cephalanthera
4-5-6-

H. 4. E. *grandiflóra*, Sm. (*large white Helleborine*); leaves ovato-lanceolate sessile, bracteas much longer than the erect flowers, perianth patent, lip 3-lobed middle lobe large oval retuse shorter than the rest of the perianth. *Engl. Fl. v. iv. p.* 43.—*E. pallens, Sw.— Br. in Hort. Kew, ed.* 2. *v. v. p.* 202. *Hook. in Fl. Lond. N. S. t.* 76.—*Serapias grandiflora, Linn—Engl. Bot. t.* 271.

In E. grandiflora, the middle part of the pollen grai
penetrates the stigma early. The distal part of the
labellum turns down at first giving space for
an insect, but afterwards rises up and shuts
the entrance. Mr. C. D. thinks that insects enter
and assist in fertilization.

Woods and thickets, chiefly in a chalky soil. *Fl.* June. ♃.—*Stem* a foot or more high. *Cal.-leaves* and *petals* nearly equal, large, oblongo-ovate, white, concave, including the small *lip* which is also white, but yellowish within. *Column* of fructification in this and the following species very long: in the preceding ones very short.

5. E. *ensifólia*, Sw. (*narrow-leaved white Helleborine*); leaves lanceolate much acuminated subdistichous, bracteas very minute subulate, flowers erect, lip 3-lobed, middle lobe large roundish obtuse much shorter than the rest of the perianth. *Br. in Hort. Kew, ed.* 2. *v. v. p.* 202. *Hook. in Fl. Lond. N. S. t.* 77. *Hook. Scot. i. p.* 255. *Engl. Fl. v. iv. p.* 44.—*Serapias ensifolia, Linn.* —*Engl. Bot. t.* 494.

Mountainous woods in many places; but not general.

6. E. *rúbra*, Sw. (*purple Helleborine*); leaves lanceolate, bracteas longer than the downy germen, perianth spreading, lip with its middle lobe acuminate marked with raised wavy lines. *Br. in Hort. Kew, ed.* 2. *v. v. p.* 202. *Engl. Fl. v. iv. p.* 45.—*Serapias rubra, Linn.*—*Engl. Bot. t.* 437.

Rare in mountainous woods, in England. *Fl.* May, June. ♃.—*Calyx* and inner *petals* purplish-red. *Lip* almost white.

**** *Anther terminal, deciduous. Pollen-masses at length waxy.* Gen. 11—13.

11. Maláxis. *Sw.* Bog-orchis.

Perianth spreading; *lip* without a spur, very small, superior, undivided: 2 lateral *petals* reflexed, smaller than the *calyx-leaves. Column* very short. *Pollen-masses* in 2 pairs.—Name: μαλακις, *softness*, from the tender nature of the plant.

H, 1. M. *paludósa*, Sw. (*Marsh Bog-orchis*); leaves 4—5 oval very concave papillose at the extremity,* lip concave acute. *Br. in Hort. Kew, ed.* 2, *v. v. p.* 208. *Engl. Bot. t.* 72. *Hook. in Fl. Lond. N. S. t.* 197. *Hook. Scot. i. p.* 255. *Engl. Fl. v. iv. p.* 47.—*Ophrys paludosa, Linn.*

Spongy bogs, in many places, but often overlooked on account of its small size. *Fl.* Aug. Sept. ♃.—*Stem* 2—4 inches high. *Flowers* erect, minute, in a small greenish *spike*. *Calyx* of 3, ovate, horizontally spreading *leaves*, two of them erect, their bases embracing the base of the superior *lip* which is thus also erect. Two lateral *petals* recurved.

12. Líparis. *Rich.* Liparis.

Perianth spreading, uniform, with linear segments. *Lip* inferior, undivided, reflexed. *Column* elongated. *Pollen-masses* in 2 pairs.—Name: λιπαρος, *fat*, or unctuous to the touch.

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* These papillæ the Rev. Professor Henslow has clearly ascertained to be little bulbous *gemmæ*, as he has described and figured them in the Gardener's Magazine, v. i. p. 442.—Mr. W. Wilson confirms this interesting statement, and, further, finds an *hybernaculum* formed in the autumn among the decayed leaves. Thus, independent of *seeds*, this curious little plant has a twofold mode of increase.

H. 1. L. ***Loesélii***, Rich. (*two-leaved Liparis*); leaves two broadly lanceolate, scape trigonal, lip entire longer than the perianth. *Malaxis Loeselii, Sw.—Engl. Fl. v. iv. p.* 48.—*Ophrys Loeselii, Linn.—Engl. Bot. t.* 47.

Sandy bogs, in Norfolk, Suffolk, and Cambridgeshire. *Fl.* July, ♃.—Six to eight inches high. *Flowers* few, in a lax *spike*, yellowish-green; in their general structure very similar to those of the tropical and parasitical *L. foliosa, Bot. Mag. t.* 2709.

13. Corallorhíza. *Hall.* Coral-root.

Lip produced at the base; with the *spur* adnate with the germen or free. *Column* free. *Masses* of *pollen* 4, oblique, not parallel. *Br.*—Name: κυϱαλλιον, *coral*, and ϱιζα, *a root*, from the curious structure of the root.

H. 1. C. *innáta*, Br. (*spurless Coral-root*); spur very short adnate. *Br. in Hort. Kew, ed.* 2. *v. v. p.* 209. *Hook. in Fl. Lond. N. S. t.* 142. *Hook. Scot. i. p.* 255. *Engl. Fl. v. iv. p.* 49.—*Ophrys corallorhiza, Linn.—Engl. Bot. t.* 1547.

Marshy woods in Scotland, rare; Ross-shire; near Edinburgh; Methven wood, Perthshire, (since destroyed); also found in sandy places near the sea close by Ayr *Mr. Goldie*, and at the sands of Barrie, Dundee, *Mr. Thos. Drummond. Fl.* July. ♃.—*Root* of thick, interwoven, fleshy fibres. *Stem* 6—12 inches high, greenish-white, with two or three lanceolate, acute, sheathing *scales*, rather than *leaves*. *Flowers* 6—8 in a short lax *spike*, pale yellowish-green. *Calyx-leaves* linear-lanceolate, keeled, spreading; 2 lateral *petals* shorter than the *calyx*, erecto-connivent. *Lip* oblong, white, nearly entire, waved at the margin, with a few purple blotches, deflexed. *Column* elongated.

ORD. II. DIANDRIA. 2 *Stamens.*

14. Cypripédium. *Linn.* Lady's Slipper.

Lip large, inflated. *Column* with a large, terminal, dilated lobe (or sterile *stamen*) separating the anthers. Two lateral or lower *calyx-leaves* often combined.—*Nat. Ord.* Orchideæ. *Juss.*—Name: Κυπϱις, *Venus*, and ποδιον, *a slipper: Venus' slipper.*

1. C. *Calcéolus*, Linn. (*common Lady's Slipper*); stem leafy, terminal lobe of the column nearly oval, lip shorter than the calyx somewhat laterally compressed. *Engl. Bot. t.* 1. *Hook. in Fl. Lond. N. S. t.* 42. *Engl. Fl. v. iv. p.* 51.

Woods in the north of England, but rare. *Fl.* June. ♃.—One of the most beautiful and interesting of our native plants.

ORD. III. HEXANDRIA. 6 *Stamens.*

15. Aristolóchia. *Linn.* Birthwort.

Perianth superior, single, tubular, often swelling at the base, the mouth on one side dilated, 1-lipped. *Stigma* with 6 lobes. *Capsule* inferior, with 6 *cells.*—*Nat. Ord.* Aristolochieæ. *Juss.*—named from its supposed medicinal virtues.

1. A. *Clematítis,* Linn. (*common Birthwort*)*;* stem erect, leaves heart-shaped, flowers upright, lip oblong shortly acuminate. *Engl. Bot. t.* 398. *Engl. Fl. v. iv. p.* 53.

Copses and pastures, and especially among the ruins of nunneries; in the East and South-east of England. *Fl.* July, Aug. ♃.—*Flowers* pale yellow.

CLASS XXI. MONŒCIA.

28 - 14

Stamens and Pistils in separate flowers on the same plant.

ORD. I. MONANDRIA. 1 *Stamen.*

1. Euphórbia. *Linn.* Spurge.

Involucre of one piece, including several barren flowers and 1 fertile.—*Barr. fl.* A single *stamen* without calyx or corolla. *Fert. fl.* A single *pistil* without calyx (or rarely a very minute one) or corolla. *Germen* 3-lobed. *Styles* 3, cleft. *Caps.* 3-seeded. —*Nat. Ord.* Euphorbiaceæ. *Juss.*—Named from *Euphorbus,* Physician to Juba, king of Mauritania, who brought the plant into use.

* *Glands of the Involucre* 4, *rounded on the outside.*

1. E. *Péplis,* Linn. (*purple Spurge*)*;* stem procumbent forked, leaves oblong heart-shaped nearly entire, glands of the involucre with small membranaceous scales beneath, capsule smooth, seeds smooth (white). *Engl. Bot. t.* 2002. *Engl. Fl. v. iv. p.* 59.

Sandy coast, in the south of Devon and Cornwall. *Fl.* July, Sept. ⊙. —Remarkable for its procumbent *stems,* of a glaucous hue, much tinged with purple.

2. E. *helioscópia,* Linn. (*Sun Spurge*)*;* umbel of 5 principal branches, bracteas and leaves membranaceous obovato-cuneate serrated upwards, capsule glabrous, seeds reticulated and pitted. *Engl. Bot. t.* 883. *Hook. Scot. i. p.* 148. *Engl. Fl. v. iv. p.* 63.

Abundant in waste and cultivated ground. *Fl.* July, Aug. ⊙.—The acrid milky juice is employed to destroy warts.

H. 3. E. *platyphýlla,* Linn. (*broad-leaved warted Spurge*)*;* umbel of about 5 principal branches and with frequently scattered peduncles beneath, bracteas cordate, leaves membranaceous broadly obovato-lanceolate acute finely serrulated hairy beneath, glands of the involucre oval, capsule warted, seeds smooth (brownish). *Jacq. Ic. Rar. t.* 376, (*excellent*). *Sm. Fl. Brit. p.* 517.—*E. stricta, Linn. and Engl. Bot. t.* 333, (*starved specimens*). *Engl. Fl. v. iv. p.* 64

Corn-fields; Albourne and near Henfield, Sussex; *Mr. Borrer,* (exactly corresponding with Jacquin's plant.) Essex, Cambridgeshire, Kent, Tunbridge Wells, (*Rev. Prof. Henslow*)*;* Suffolk and probably other countries.—I have received it also from Canada, whither perhaps it had been introduced from Europe.

4. E. *hibérna*, Linn. (*Irish Spurge*); umbel of about 5 principal branches, bracteas and leaves elliptical quite entire, glands of the involucre 4 kidney-shaped with intermediate rounded lobes, capsule warted glabrous, seeds smooth. *Engl. Bot. t.* 1337. *Engl. Fl. v. iv. p.* 67.

In hedges and thickets, in several parts of the south of Ireland. Between Feversham and Sittingbourne, Kent; *Huds. Fl.* June. ♃.—One and a half to two feet high.*

5. E. *pilósa*, (*hairy Spurge*); umbel of about 5 principal branches with several scattered inferior ones, bracteas and leaves elliptical finely serrated hairy, glands of the involucre 4 oval with intervening rounded lobes, capsule smoothish shaggy, seeds glossy smooth. *Reichenb. Ic. Bot. t.* 145.

" Abundant in the hedges at Slinfold, Sussex; naturalized?" *Mr. Borrer;* who observes that formerly, Mr. Manningham, Dillenius' friend, was the incumbent there. It has, at any rate, as good a claim to be considered native, as some other species of the *genus*. *Fl.* July. ♃.—Habit and size of the last, often tinged with purple.

*** Glands of the involucre pointed or angular.*

6. E. *Ésula*, Linn. (*leafy branched Spurge*); umbel of many principal branches and several scattered peduncles below, bracteas cordate, leaves membranaceous oblongo-lanceolate mostly entire, glands of the involucre with two horns, germens glabrous " scabrous," seeds obovate smooth. *Engl. Bot. t.* 1399. *Hook. Scot. i. p.* 148. *Engl. Fl. v. iv. p.* 65.

Woods near Edinburgh, and at Slinfold, Sussex. *Fl.* July. ♃.

H. 7. E. *Cyparíssias*, Linn. (*Cypress Spurge*); umbel of many principal branches and several scattered peduncles below, bracteas cordate, leaves linear membranaceous entire glabrous, glands of the involucre lunate, germens scabrous, seeds obovate smooth. *Engl. Bot. t.* 840. *Hook. Scot. i. p.* 148. *Engl. Fl. v. iv. p.* 66.

Groves and thickets, Staffordshire, Bedfordshire, Northumberland. *Fl.* June, July. ♃.—Readily distinguished by its numerous, narrow, linear *leaves*.

H. 8. E. *parália*, Linn. (*Sea Spurge*); umbel of about 5 principal branches often with inferior scattered ones, bracteas cordate concave, leaves coriaceous obovato- and linear-lanceolate (generally) imbricated glaucous entire concave, glands of the involucre (5) lunate, capsules wrinkled, seeds smooth. *Engl. Bot. t.* 195. *Engl. Fl. v. iv. p.* 63.

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* While botanizing in the south of Ireland, Mr. W. Christy learned from Dr. Taylor, that this plant is extensively used by the peasantry in the county of Kerry for poisoning, or rather stupifying, fish; in the same manner as the exotic *E. piscatoria*. So powerful are its qualities, that a small creel or basket, filled with the bruised root, suffices to poison the fish for several miles down a river.

Sandy sea-coast of England, and near Dublin; but not very general. *Fl.* Aug. Sept. ♃.—*Stems* numerous from the same root, woody at the base. *Leaves* very closely imbricated, especially on the young shoots.

H. 9. E. *portlándica*, Linn. (*Portland Spurge*); umbel with about 5 principal dichotomous branches and several inferior scattered ones, bracteas triangular cordate, leaves membranaceous obovato-lanceolate generally obtuse and submucronate, glands of the involucre (4) lunate with two long points, capsule rough at the angles, seeds dotted (almost white). *Engl. Bot. t.* 441. *Engl. Fl. v. iv. p.* 62.

Sandy sea-coast, in the extreme south and west of England; Wales; Isle of Man, *Mr. W. Wilson.* Galloway coast, Scotland, *Mr. G. Don.* (*Sm.*) Near Dublin, *Mr. J. T. Mackay.* *Fl.* Aug. ♃.—Six to 10 inches high. This is very rare, if not unknown, on the continent.

H. 10. E. *exígua*, Linn. (*dwarf Spurge*); umbel of generally 3 principal branches, leaves linear-lanceolate as well as the bracteas rather rigid entire glabrous often truncate and mucronate, glands of the involucre with two horns, capsules nearly smooth, seeds wrinkled. *Engl. Bot. t.* 1336. *Hook. Scot. i. p.* 148. *Engl. Fl. v. iv. p.* 60.

Corn-fields, in a light soil, frequent. *Fl.* July. ♃.—4 to 6 inches high, branched at the base. *Seeds* small, white.

H. 11. E. *Péplus*, Linn. (*petty Spurge*); umbel of about 3 principal branches, bracteas ovate, leaves membranaceous broadly obovate on short stalks entire glabrous, glands of the involucre lunate the horns very long, germen somewhat winged and scabrous, seeds dotted. *Engl. Bot. t.* 959. *Hook. Scot. i. p.* 148. *Engl. Fl. v. iv. p.* 60.

Cultivated and waste ground, abundant. *Fl.* July, Aug. ⊙.

12. E. *Láthyris*, Linn. (*Caper-Spurge*); umbel of 3—4 principal branches, bracteas cordato-acuminate, leaves submembranaceous 4-farious oblongo-lanceolate entire cordate at the base, glands of the involucre bluntly lunate, germen glabrous, seeds smooth. *Engl. Bot. t.* 2255. *Engl. Fl. v. iv. p.* 61.

Thickets about Ufton near Reading. Steep Holmes in the Severn; not truly wild. *Fl.* June, July. ♃.

H. 13. E. *amygdaloídes*, Linn. (*Wood-Spurge*); umbel of about 6 principal branches and several scattered peduncles below, leaves nearly membranaceous obovato-lanceolate hairy beneath attenuated at the base entire, bracteas perfoliated, glands lunate, capsules minutely dotted, seeds smooth. *Engl. Bot. t.* 256. *Engl. Fl. v. iv. p.* 68.—*E. sylvatica, Linn.—Jacq.*

Woods and thickets in England, especially in clayey soil. South of Ireland; *Miss Hutchins* and *Mr. Drummond*. *Fl.* March, Apr. ♃.—*Stems* red, almost shrubby.

14. E. *Charácias*, Linn. (*red shrubby Spurge*); umbel of many principal downy branches with several peduncles below, bracteas broad perfoliate acute, leaves lanceolate, glands of the involucre lunate, germens scabrous, seeds smooth. *Engl. Bot. t.* 442. *Engl. Fl. v. iv. p.* 68.

In Needwood forest, Staffordshire. *Fl.* March, Apr. ♄.—A large and handsome species, not uncommon in gardens.

2. CALLÍTRICHE. *Linn.* Water-starwort.

Barren fl. Perianth single, of two leaves (they are, rather, two *bracteas*) or none. *Anther* of 1 cell.—*Fert. fl. Germen* 4-lobed, lobes laterally compressed, indehiscent, with 4, 1-seeded cells.—*Nat. Ord.* HALORAGEÆ. *Br.*—Name; καλος, *beautiful*, and θριξ, *hair*. Its stems are long and slender, and resemble hairs.

1. C. *vérna*, Linn. (*vernal Water-starwort*); fructiferous peduncles very short with two bracteas at their base, fruit regularly tetragonal, each portion bluntly keeled at the back. *Arn.*—*Engl. Fl. v. i. p.* 10. *Arn. in Ed. Journ. of Nat. and Geogr. Sc. v. i. p.* 426. —*C. aquatica*, *Engl. Bot. t.* 722. *Hook. in Fl. Lond. N. S. t.* 127. *Hook. Scot. i. p.* 259.

Ditches, pools and slow streams, abundant. *Fl.* Apr. May. ⊙.—This varies much, as do almost all aquatic plants, in its foliage. Upper and floating *leaves* generally oval and stalked, 3-ribbed; lower ones single-ribbed, linear; rarely all linear.

2. C. *pedunculáta*, De Cand. (*pedunculated Water-starwort*); fructiferous peduncles more or less elongated without bracteas at the base, fruit regularly tetragonal, each portion bluntly keeled at the back. *Arn. in Journ. of Nat. and Geogr. Sc. v. i. p.* 427.—*C. autumnalis*, *Hook. in Engl. Bot. Suppl. t.* 206. (*excl. the syn.*)

Ditch at Amberley, Sussex; *Mr. Borrer*. *Fl.* June. ⊙.

Il. 3. C. *autumnális*, Linn. (*autumnal Water-starwort*); fructiferous peduncles very short without bracteas, fruit irregularly tetragonal, each portion broadly and acutely winged at the back. *Arn. Engl. Fl. v. i. p.* 10.—*C. aquatica*, γ. *Engl. Bot. t.* 722. (*the small figure*).

Ditches, near London. Outlet of Llyn Maclog, Anglesea; *Mr. W. Wilson*. Loch of Clunie, Scotland. *Fl.* June—Oct. ⊙.—Mr. Arnott has, I believe, first correctly distinguished the 3 British species of *Callitriche*, and has published them, with many excellent remarks on the genus, in the useful work just mentioned.

3. ZANNICHÉLLIA. Linn. *Horned-pondweed.*

Barren fl. Perianth none.—*Fert. fl. Perianth* single, of 1 leaf. *Germens* 4 or more. *Style* 1. *Stigma* peltate. *Capsules* nearly sessile.—*Nat. Ord.* ALISMACEÆ, *Juss.* (FLUVIALES. *Vent.*)—Named in honour of *John Jérome Zannichelli*, a Venetian apothecary and botanist.

H. 1. Z. *palústris*, Linn. (*common horned-pondweed*) ; anthers 4-celled, stigmas entire, pericarps toothed on the back. *Engl. Bot. t.* 1844. *Hook. Scot. i. p.* 258. *Engl. Fl. v. iv. p.* 70.

Ditches and stagnant waters. *Fl.* Aug. ⊙.—Floating. *Stems* long, filiform, branched. *Leaves* opposite, linear, entire, sometimes emarginate at the point. *Flowers* axillary, from a membranaceous bractea. *Fertile fl.* upon a very short stalk, from the base of which arises a single naked *anther*, borne on a long white *filament*.

4. ZOSTÉRA. *Linn.* Grass-wrack.

Stamens and *pistils* inserted in 2 rows upon one side of a *spadix*. *Spatha* foliaceous. *Anthers* ovate, sessile, alternating with the germens. *Germen* ovate. *Style* bifid. *Drupe* with 1 seed.—*Nat. Ord.* ALISMACEÆ, *Juss.* (FLUVIALES. *Vent.*)—Name; ζωστηρ, a *girdle*, or *ribbon*, which the leaves somewhat resemble.

H. 1. Z. *marína*, Linn. (*common Grass-wrack*) ; leaves entire somewhat 3-nerved, stem roundish. *Engl. Bot. t.* 467. *Hook. in Fl. Lond. N. S. t.* 35. *Hook. Scot. i. p.* 259. *Engl. Fl. v. i. p.* 5.

Creeks and ditches of salt water and on the sea-shores, common. *Fl.* through the summer. ♃.—*Stems* various in length, as are the linear, obtuse, somewhat 3-nerved *leaves*, which have sheathing bases. *Spadix* linear, arising from a sheathing portion of the leaf, which thus forms the *spatha*. *Flowers* green, on one side of the *spadix*, quite destitute of perianth, in two rows. *Pistils* and *anthers* alternate, generally 2 *anthers* and then 1 *pistil;* both ovate, or oblongo-ovate, the *germen* terminated by a long, filiform, bipartite *style*. *Anthers* bursting irregularly.—This plant is used in the packing of glass-bottles and earthenware. In the south of Russia, Pallas tells us it is found among pottery in old tombs. Beds are frequently made of it, especially in the north of Europe: and it is sold in our shops, under the name of "*Alva* (*Ulva*,) *marina*," for similar purposes.

(*For* Chara, *See* Cl. CRYPTOGAMIA.)

ORD. II. DIANDRIA. 2 *Stamens.*

(*See* Carex *in* ORD. III.)

ORD. III. TRIANDRIA. 3 *Stamens.*

5. TÝPHA. *Linn.* Cat's-tail or Reed-mace.

Flowers collected into very dense, cylindrical *spikes* or *catkins*. *Barren fl. Perianth* 0. *Stam.* 3 together upon a chaffy or hairy receptacle, united below into 1 filament. *Fert. fl. Perianth* 0. *Pericarp* pedicellate, surrounded at the base with hairs resembling a *pappus*.—*Nat. Ord.* TYPHACEÆ, *Juss.*—Name; τιφος, a *marsh*, where the plant grows.

1. T. *latifólia*, Linn. (*great Cat's-tail or Reed-mace*); leaves linear nearly plane, sterile and fertile catkin continuous. *Engl. Bot. t.* 1455. *Hook. Scot. i. p.* 259. *Engl. Fl. v. iv. p.* 71.

Borders of ponds and lakes. *Fl.* July, Aug. ♃.—*Stems* 3—6 feet high. *Leaves* very long, sometimes nearly an inch broad. *Catkins* very long, close together; *fertile one* greenish-brown; *sterile one* yellow, with one or two large membranaceous *bracteas.*

2. T. *angustifólia*, Linn. (*lesser Cat's-tail or Reed-mace*); leaves linear grooved below, sterile and fertile catkins a little distant from each other. *Engl. Bot. t.* 1456. *Hook. Scot. i. p.* 259. *Engl. Fl. v. iv. p.* 72.

Pools and ditches, less frequent than the preceding. About London; not uncommon in the east of England, as in Norfolk, Suffolk and Essex. Loch of Lindore, Fifeshire, *Mr. D. Don. Fl.* July. ♃.—Smaller than the last, with much narrower *leaves* and *catkins. Sterile flowers,* according to Smith, (which in *T. latifolia* have hairs on the receptacle), mixed with chaffy *scales.*

3. T. *mínor*, Sm. (*dwarf Cat's-tail or Reed-mace*); leaves linear-setaceous, barren and fertile catkins distant the latter elliptical. *Engl. Bot. t.* 1457. *Engl. Fl. v. iv. p.* 73.—*T. minima et T. minor? Willd.*—*T. angustifolia, β. Linn.*

Said, by Dillenius, to have been found by *Mr. Dandridge* on Hounslow Heath. *Fl.* July. ♃.—A very distinct species; but I fear it has little claim to be considered British.

6. SPARGÁNIUM. *Linn.* Bur-reed.

Flowers in sphærical, dense heads. *Barren fl. Perianth* single, of 3 leaves. *Fertile fl. Perianth* single, of 3 leaves. *Drupe* dry, with 1 seed.—*Nat. Ord.* TYPHACEÆ. *Juss.*—Name σπαϱγανον, a *little band,* from its narrow and long leaves.

H. 1. S. *ramósum*, Huds. (*branched Bur-reed*); leaves triangular at the base, their sides concave, common flower-stalk branched, stigma linear. *Engl. Bot. t.* 744. *Hook. Scot. i. p.* 260. *Engl. Fl. v. iv. p.* 74.—*S. erectum, Linn.*

Banks of ditches, lakes and stagnant waters. *Fl.* July. ♃.—*Stem* 2 feet and more high, with a few, long, sword-shaped *leaves* or *bracteas,* having broad membranous sheathing bases on the upper or branching part. *Root-leaves* very long, linear-ensiform, triangular at the base, their sides concave. *Sterile flowers* in sphærical *heads,* distantly placed: *fertile ones* below.

2. S. *símplex*, Huds. (*unbranched upright Bur-reed*); leaves triangular at the base, their sides flat, common flower-stalk simple, stigma linear. *Engl. Bot. t.* 745. *Hook. Scot. i. p.* 260. *Engl. Fl. v. iv. p.* 75.—*S. erectum, β. Linn.*

Ditches and stagnant waters, especially in a gravelly soil. *Fl.* July. ♃.—Much smaller than the last. *Stem* rarely if at all branched, though the lower heads of *flowers* are stalked. The sides of the *leaves* are plane, not concave or grooved. The *flowers* pale yellow.

H. 3. S. *nátans*, Linn. (*floating Bur-reed*); leaves floating plane, common flower-stalk simple, stigma ovate very short, head of sterile flowers mostly solitary. *Engl. Bot. t.* 273. *Hook. Scot. i. p.* 260. *Engl. Fl. v. iv. p.* 75.

Lakes, ditches and stagnant waters; abundant in the north. *Fl.* July. ♃.—*Leaves* very long, linear, pellucid.

7. CÁREX. *Linn.* Carex or Sedge.

Flowers collected into an imbricated *spike* or *catkin*.* *Calyx* (as it is usually called), a scale. *Barren fl. Cor.* 0. *Fertile fl. Cor.* of 1 piece, urceolate, swollen. *Stigmas* 2—3. *Nut* triquetrous, included within the persistent corolla, (which is thus considered to form part of the *fruit.*)—*Nat. Ord.* CYPERACEÆ. *Juss.* —Name; supposed to be derived from κειρω, to *shear* or *cut*, in allusion to its sharp leaves and stems.

* *Spike simple, solitary.*

H. 1. C. *dioíca*, Linn. (*creeping separate-headed Carex*); spike simple diœcious, fruit mostly ascending ovate shortly acuminated rough at the margin upwards, leaves and stem smoothish, root creeping. *Engl. Bot. t.* 543. *Hook. Scot. i. p.* 260. *Engl. Fl. v. iv. p.* 77.

Spongy bogs. *Fl.* May, June. ♃.—A span high. *Stigmas* 2.

2. C. *Davalliána*, Sm. (*prickly separate-headed Carex*); spike simple diœcious, fruit ovate much acuminated recurvato-deflexed rough at the margin upwards, leaves and stem rough, root tufted. *Engl. Bot. t.* 2123. *Hook. Scot. i. p.* 260. *Engl. Fl. v. iv. p.* 78.

Subalpine bogs? rare. Mearns-shire, and near Edinburgh? County of Down and near Belfast, Ireland. Lansdown, near Bath. *Fl.* June. ♃. —A span to a foot high. Much resembling the last, which I fear is not unfrequently mistaken for it. This is the case, Dr. Greville states, with the Edinburgh station.—The Bath plant is no doubt correct, and there Mr. E. Forster assures us it grows "on the slope of a hill on which there is a clump of firs."

3. C. *pulicáris*, Linn. (*Flea Carex*); spike simple, upper half with barren flowers, fruit lax oblongo-lanceolato-acuminate reflexed, stigmas 2. *Engl. Bot. t.* 1051. *Hook. Scot. i. p.* 261. *Engl. Fl. v. iv. p.* 78.

Bogs, frequent. *Fl.* May, June. ♃.—A span high. *Stems* smooth *Leaves*, as in all of this division, setaceous or filiform. *Fruit* dark brown, shining, smooth.

4. C. *pauciflóra*, Lightf. (*few-flowered Carex*); spike simple of few flowers the uppermost barren, fruit lax lanceolato-subulate

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* Whilst the scale is considered a calyx or part of the flower, the term *Catkin*, used by Sir J. E. Smith, is evidently improper. The flowers are, in this view, truly spicated.

patenti-reflexed, stigmas 3. *Engl. Bot. t.* 2041. *Hook. Scot. i. p.* 261. *Engl. Fl. v. iv. p.* 79.—*C. Leucoglochin, Ehrh.*

Not unfrequent on the Highland mountains of Scotland, in moory places. Crag Lake, Northumberland, *Mr. Winch. Fl.* June. ♃.—Habit of the last. *Fruit* of a pale yellowish colour, striated.

** *Spikelets aggregated, their uppermost flowers mostly sterile. Stigmas* 2.

5. C. *incúrva*, Lightf. (*curved Carex*); spikelets sterile at their extremity collected into a roundish head, bracteas membranaceous shorter than the spikelets, fruit broadly ovate acuminated nearly entire at the point, stem obtusely angular, leaves channelled. *Engl. Bot. t.* 927. *Hook. Scot. i. p.* 261. *Engl. Fl. v. iv. p.* 85.—*C. juncifolia, All.*

Sandy sea-shores in the north of Scotland. *Fl.* June. ♃.—*Root* much creeping. *Stems* 2—4 inches high, curved. *Head* of *flowers* large.

H. 6. C. *arenária*, Linn. (*Sea Carex*); lower spikelets fertile, upper ones sterile all crowded into an oblong interrupted head, fruit with a membranous margin shorter than the calyx, bracteas membranaceous lower ones somewhat leafy, stem triangular, leaves plane. *Engl. Bot. t.* 928. *Hook. Scot. i. p.* 262. *Engl. Fl. v. iv. p.* 85.

Sandy sea-shores, frequent, where it is of great service in binding the soil. *Fl.* June. ♃.—*Roots* excessively long and creeping. *Stems* rough, 8 inches to a foot high. *Fruit* with a green membranous wing.

7. C. *intermédia*, Gooden. (*soft brown Carex*); inferior and terminal spikelets fertile, all crowded into an oblong interrupted head, the intermediate ones sterile, fruit acutely margined longer than the calyx, bracteas membranaceous the lower ones somewhat leafy, stem triangular, leaves plane. *Engl. Bot. t.* 2042. *Hook. Scot. i. p.* 262. *Engl. Fl. v. iv. p.* 86.

Marshy ground and wet meadows. *Fl.* June. ♃.—*Root* creeping, running deep into the mud. *Stems* one to 1½ foot high. *Spikes*, or heads of spikelets, in general appearance similar to the last. *Fruit* large, not so distinctly winged as gradually flattened towards the margin, more striated on its flat or inner side, the *beak* broader at its summit. The *stem* much taller and the *leaves* less confined to the lower part of it.

8. C. *divísa*, Huds. (*bracteated Marsh Carex*); spikelets sterile at their extremity crowded into a somewhat ovate head, the lower ones simple or compound with a leafy erect bractea at their base, fruit roundish ovate convex on one side slightly concave on the other acutely angular cloven at the point. *Engl. Bot. t.* 1096. *Hook. Scot. i. p.* 262. *Engl. Fl. v. iv. p.* 87.

Marshy places, especially near the sea; principally on the east of England, and in Angus-shire. *Fl.* May, June. ♃.—*Stems* about 1 foot high: lower *bracteas* mostly with a long leafy point.

9. C. *muricáta*, Linn. (*greater prickly Carex*); spikelets sterile at their extremity slightly compound collected into an oblong rather dense spike, fruit plano-convex ovato-acuminate acute angular spreading rough at the beak. *Engl. Bot. t.* 1097. *Hook. Scot. i. p.* 262. *Engl. Fl. v. iv. p.* 88.—*C. spicata, Huds.—Lightf., not Linn.*

Marshy and especially gravelly pastures. *Fl.* May, June. ♃.—One to two feet high, slender. *Bracteas* small, lanceolate, subsetaceous. *Fruit* yellow-brown, broad, rather large.

H. 10. C. *divúlsa*, Gooden. (*grey Carex*); spikelets sterile at their extremities distant upon an elongated spike, fruit plano-convex ovato-acuminate acute angular "erect" (*Sm.*) rough at the beak. *Engl. Bot. t.* 629. (young spike). *Engl. Fl. v. iv. p.* 89.—*C. muricata, β. Wahl.—Hook. Scot. i. p.* 89.

Moist shady pastures, not uncommon. *Fl.* May, June. ♃.—This species assuredly borders very closely on the preceding: the *fruit* I cannot in any respect find different. The colour is paler, the *spikes* more elongated and slender, with more distant *spikelets*. I believe I stand singly among British Botanists in considering this plant not distinct from *C. muricata.*

H. 11. C. *vulpína*, Linn. (*great Carex*); spikelets sterile at their extremities compound collected into a cylindrical crowded spike, fruit ovate acuminate plano-convex acute angular divergent, stem very acutely triangular, leaves broad. *Engl. Bot. t.* 307. *Hook. Scot. i. p.* 262. *Engl. Fl. v. iv. p.* 90.

Wet shady places, especially near water. *Fl.* June. ♃.—Two feet or more high: *stem* stout, rough, as well as the broad *leaves* at their margin. *Bracteas* small, setaceous. *Spike* large, greenish. *Fruit* pale, rough at the margin of the lengthened *beak*, and bifid at the point.

H. 12. C. *teretiúscula*, Gooden. (*lesser panicled Carex*); spikelets sterile at their extremity scarcely compound and collected into a slender cylindrical interrupted spike, fruit ovate acuminate even above not margined gradually attenuated into a rather long serrulated bifid beak, stem bluntly triangular, leaves very narrow. *Engl. Bot. t.* 1065. *Engl. Fl. v. iv. p.* 91.—*C. paniculata, β. Hook. Scot. i. p.* 263.

Boggy, watery meadows, in various places. *Fl.* May, June. ♃.—This I had, in the *Flora Scotica*, considered a *var.* of the following species. Now, in deference to very high authority, I have restored it to its rank as a species. Mr. W. Wilson, as well as Sir J. E. Smith, are satisfied the two are distinct. Yet, the Rev. Jas. Dalton, who has studied *Carices* with great care, and whose knowledge and classical attainments are only equalled by the excellence of his heart, "is willing to allow *C. teretiuscula* to be a variety of *C. paniculata*, but it does not grow in clumps like the latter." It is, too, much smaller, with greatly narrower *leaves*, blunter *stems*, with browner, more acuminated *fruit*, less broad, less gibbous beneath, less flat on its upper side, which is destitute of margin and of raised lines at the base.

H. 13. C. *paniculáta*, Linn. (*great panicled Carex*); spikelets sterile at their extremity compound collected into a sort of paniculated spike, fruit ovate gibbous beneath slightly margined flat above and striated at the base, acuminated into a rather short bifid serrulated beak, stem acutely triangular, leaves broad. *Engl. Bot. t.* 1064. *Hook. Scot. i. p.* 262. *Engl. Fl. v. iv. p.* 92.

Swampy and spongy bogs. *Fl.* June. ♃.—*Roots* densely tufted. Much larger than the last, and certainly better distinguished by its habit and general aspect, than by words. The *C. paradoxa* of continental authors appears to be almost intermediate between them.

*** *Spikelets aggregated, their lowermost flowers sterile. Stigmas* 2.

H. 14. C. *stelluláta*, Gooden. (*little prickly Carex*); spikelets few (3—4) sterile at their base roundish distant, fruit ovate much attenuated plano-convex acute angular spreading rough at the margin. *Engl. Bot. t.* 806. *Hook. Scot. i. p.* 263. *Engl. Fl. v. iv. p.* 80.

Marshes and heathy places. *Fl.* May, June. ♃.—A span to a foot high. *Leaves* nearly as long as the *stem.* Distinguished by the few, much beaked *capsules*, placed in small distant roundish *spikelets*, and which spread, when ripe, in every direction.

H. 15. C. *cúrta*, Gooden. (*white Carex*); spikelets sterile at their base, about 5 rather distant elliptical, bracteas very minute (except the lower one), fruit broadly ovate acute plane above slightly convex beneath subobtusangular faintly striated as long as the scales. *Engl. Bot. t.* 1386. *Hook. Scot. i. p.* 263. *Engl. Fl. v. iv. p.* 81.

Bogs, in several places, but not very general. *Fl.* June. ♃.—Distinguished by its pale elliptical *spikelets*, and imbricated, compressed, almost elliptical *fruit.*

*H. 16. C. *elongáta*, Linn. (*elongated Carex*); spikelets numerous oblong lax rather distant sterile with minute pointed bracteas, fruit plano-convex oblongo-acuminate scarcely bifid at the point patent longer than the scales. *Host, Gram. Austr. v. iii. t.* 79. (excellent). *Engl. Fl. v. iv. p.* 82.

Marshes, very rare. Aldwark, Yorkshire; *Mr. Jonathan Salt*, 1807. Pit side at Over, Cheshire, 1827, *Mr. W. Wilson.* *Fl.* June. ♃.—*Root* tufted. *Stems* 1 to 1½ foot high, with 3 acute angles, rather rough, as well as the *leaves.* *Spikelets* brown. *Fruit* lax.—I am indebted to Mr. Wilson for excellent specimens of this exceedingly rare, yet very distinct *Carex.*

H. 17. C. *ovális*, Gooden. (*oval-spiked Carex*); spikelets about 6 sterile at the base oval approximate, fruit as long as the calyx ovato-acuminate compressed plano-convex striated with a broad membranous margin rough at the edge, the beak bifid. *Engl. Bot. t.* 806. *Hook. Scot. i. p.* 263. *Engl. Fl. v. iv. p.* 82.

Bogs and marshy places. *Fl.* June. ♃.—*Stems* 1 foot high, triangular. *Spikelets* brownish-green, shining. *Calyx-scales* concealing the *fruit.* *Bracteas* small, uppermost ones resembling the calyx-scales.

*C. Vahlii. Appen: 24.

18. C. *tenélla*, Schk. (*slender-headed Carex*); "spikelets 3 bracteated distant minute of about 3 florets, fruit elliptical convex at each side very smooth and even with a blunt entire beak, stamens 2." *Sm.—Schk. Car.* 23, *t. P. p. f.* 104. (*excl. of i. k. l.*) *Sm.—Engl. Fl. v. iv. p.* 83.—*C. straminea, Don, Cant. ed.* 5, *p.* 220. (*Sm.*)

In a wood by the River Esk, Angus-shire, very rare; *Mr. G. Don Fl.* May, June. ♃.—With this I am unacquainted. May it not be a starved state of the following?

H. 19. C. *remóta*, Linn. (*remote Carex*); spikelets several (small) sterile at their base very distant, fruit longer than the calyx oblongo-ovate shortly acuminate plano-convex acute angular bifid at the point, bracteas very long and narrow leafy reaching beyond the spike. *Engl. Bot. t.* 832. *Hook. Scot. i. p.* 263. *Engl. Fl. v. iv. p.* 84.

Woods and moist shady places. *Fl.* June. ♃.—Whole plant very slender, pale green, one foot to 1½ foot high. Resembling the following in many respects: but "the *stem* has blunter angles; the lowest *bractea* is much longer than in that species: the *leaves* compresso-canaliculate (with incurved sides) and much narrower:—the *cal. scales*, too, narrower, their nerve quite smooth, discontinued below the membranous summit." *W. Wilson.*

20. C. *axilláris*, Gooden. (*axillary clustered Carex*); spikelets several sterile at their base very distant, fruit longer than the calyx oblongo-ovate shortly acuminate plano-convex acute angular the beak deeply bifid, bracteas setaceous scarcely so long as the spike. *Engl. Bot. t.* 993. *Engl. Fl. v. iv. p.* 84.

Marshes, rare. Putney, by London; and Earsham, Norfolk. Over in Cheshire and Killin, Scotland; *Mr. W. Wilson.* Near Crichton Castle, Edinburgh; *Dr. Bainbridge. Fl.* June. ♃.—Stouter and taller than the last: *spikelets* with more *flowers*, lower one compound. *Cal. scales* with 2, close, green, generally rough nerves, reaching to the summit, hence more rigid.

**** *Barren and fertile flowers in separate spikes: barren flowers mostly single. Bracteas membranaceous. Stigmas* 3.

H. 21. C. *digitáta*, Linn. (*fingered Carex*); bracteas membranous sheathing, spikes filiform erect lax, fertile about 3 longer than the barren one, fruit obovato-triquetrous downy on a short stalk, leaves plane. *Engl. Bot. t.* 615. *Engl. Fl. v. iv. p.* 93.

Rare, in woods in limestone countries: near Bath and Bristol; and Thorpe-arch and Mackershaw wood, Ripon, Yorkshire. *Fl.* May. ♃.—*Root* of tufted fibres. *Stem* 8—10 inches high. *Leaves* soft, shorter than the stem.—I do not at all see how the *C. ornithopoda* of Willd. differs from this.

H. 22. C. *clandestína*, Gooden. (*dwarf silvery Carex*); bracteas membranous, fertile spikes remote of very few flowers concealed by the bractea, fruit broadly obovato-triquetrous slightly downy contracted at the base, leaves longer than the stems channelled rough rigid. *Engl. Bot. t.* 2124. *Engl. Fl. v. iv. p.* 94.

On the limestone rocks at St. Vincent's, Bristol; *Mr. Sole. Fl.* May. ♃. Remarkable for the few *flowers* of the fertile *spikes* and those concealed by the comparatively large, membranous *bracteas,* as the short *stems* are by the *leaves.*

***** *Barren and fertile flowers in separate spikes: the barren mostly solitary. Bracteas leafy, often sheathing.*

† *Stigmas* 3.

H. 23. C. *péndula,* Huds. (*great pendulous Carex*); sheaths elongated nearly equal to the flower-stalks, fertile spikes cylindrical very long and drooping, fruit ovate shortly acuminate bifid at the extremity closely imbricated, leaves broad. *Engl. Bot. t.* 2315. *Hook. Scot. i. p.* 264. *Engl. Fl. v. iv. p.* 95.

Moist, wooded and shady places, not very general. *Fl.* May, June. ♃.—Three or 4 feet high; 8 feet near Auchincruive, Ayrshire, (*Mr. Jas. Wilson*):—well distinguished by its long, pendulous, cylindrical *spikes.*

H. 24. C. *strigósa,* Huds. (*loose pendulous Carex*); sheaths elongated equal to the flower-stalks, fertile spikes slender filiform nearly erect, fruit ovato-lanceolate nerved slightly recurved loosely imbricated, leaves rather broad. *Engl. Bot. t.* 994. *Hook. Scot. i. p.* 264. *Engl. Fl. v. iv. p.* 95.

Groves and thickets in several parts of the east and middle of England. Arnistone woods, Edinburgh. *Fl.* May, June. ♃.—One foot to two feet high. *Cal. scales* a little shorter than the *fruit.*

H. 25. C. *sylvática,* Huds. (*pendulous Wood Carex*); sheaths half as long as the flower-stalks, fertile spikes filiform rather slender slightly drooping, fruit broadly ovate much acuminated cleft at the point, leaves narrow. *Engl. Bot. t.* 995. *Hook. Scot. i. p.* 264. *Engl. Fl. v. iv. p.* 96.

Moist woods, frequent. *Fl.* May, June. ♃.—Similar to the last; but the *spikes* are shorter and broader; the *fruit* very different, glabrous and so acuminated as to terminate in a long *beak. Cal. scales* longer in proportion.—Linnæus tells us that this plant, when carded and dressed, is employed by the Laplanders as a wadding to protect them from the cold.

26. C. *depauperáta,* Gooden. (*starved Wood Carex*); sheaths much shorter than the flower-stalks, fertile spikes erect remote very few-flowered, fruit large nearly globose inflated terminating in a long beaked bifid point. *Engl. Bot. t.* 1098. *Hook. Scot. i. p.* 264. *Engl. Fl. v. iv. p.* 97.

Dry woods, rare. Godalmin, Surrey; Charlton wood, Kent: and near Forfar, Scotland. *Fl.* May, June. ♃.—One or one foot and a half high. *Spikes* very distant; their few *flowers,* and large, inflated, beaked *fruit* decidedly marking the species.

27. C. *Mielichóferi,* Willd. (*loose-spiked Rock Carex*); "sheaths

not half the length of the flower-stalks, fertile spikes 3 distant erect lax, fruit ovate tumid triangular rough-edged, its beak cloven membranous at the summit." *Engl. Bot. t.* 2293. *Hook. Scot. i. p.* 264.*? Engl. Fl. v. iv. p.* 98.

Rocky ledges of Craigalleach, Breadalbane; *Mr. Borrer. Fl.* Aug. ♃.—I had drawn up my character of *C. Mielichoferi* in *Flora Scotica*, from what I considered to be the same plant as is figured in *Engl. Bot.*, of which a single specimen was sent to me by Mr. Don with his MSS. name of *nivicola;* but Smith has referred that plant to the following. I must confess myself therefore ignorant of the present species; yet will observe that the Engl. Bot. figure is admirably characteristic of Mr. Don's plant just alluded to.

28. C. *speirostáchya*, Sw. (*dense short-spiked Carex*)*;* "sheaths shorter than the flower-stalks, fertile spikes about 3 distant erect ovate dense many-flowered, fruit ovate triangular ribbed smooth with a deeply cloven beak membranous at the orifice." *Engl. Fl. v. iv. p.*98.—*C. Mielichoferi, Hook. Scot. i. p.* 264. (*according to Sir J. E. Smith, who must have had specimens of the same plant from Mr. Don, to have ascertained this point.*) *C. distans*, "*Fl. Dan. t.* 1049."

Marshes, Mugdoch Castle, near Glasgow, and on the hills of Lanarkshire and Perthshire. *Fl.* July, Aug. ♃.—If Sir J. E. Smith be correct in referring Mr. Don's *nivicola* to this, I can only say that I have never seen any thing like it near Glasgow; that the appearance of the specimen is altogether that of an alpine plant, and the idea of its being so is strengthened by Mr. Don's MSS. name *nivicola.* There must exist some mistake respecting it, which I have not the means of rectifying.

29. C. *phæostáchya*, Sm. (*short brown-spiked Carex*)*;* "sheaths shorter than the flower-stalks, fertile spikes 2 distant erect ovate, fruit ovate triangular smooth with a cloven beak, scales of the barren spikes pointed, of the fertile ones obtuse." *Engl. Fl. v. iv. p.* 99. "*C. salina, Don. H. Brit.* 216."

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Rocks of the Cairn-gorum and Clova mountains; *Mr. G. Don. Fl.* June. ♃.—"Very distinct from the preceding, although the characteristic marks are not easily defined." *Sm.*

H. 30. C. *capilláris*, Linn. (*dwarf capillary Carex*)*;* common sheath half the length of the flower-stalks, fertile spikes few-flowered lax drooping, fruit oblongo-obovate acuminate as long as the ovate membranous deciduous calyx. *Engl. Bot. t.* 2069. *Hook. Scot. i. p.* 265. *Engl. Fl. v. iv. p.* 100.

Plentiful on some of the Highland mountains, especially the Breadalbane range. On Ben-y-Gloe, near Blair in Athol; *Dr. Greville, Mr. Arnott, and Hook. Fl.* June, July. ♃.—Two to 6 inches high. *Leaves* mostly radical, scarcely half the length of the *stem*, soft. One single *bractea* includes the lower part of all the peduncles, with its sheathing base. *Sterile spike* single, frequently below the *fertile ones. Fruit* dark brown, shining.

31. C. *limósa*, Linn. (*Mud Carex*); sheaths extremely short scarcely any, fertile spikes oblongo-ovate pendulous, bracteas subsetaceous, calyx acute as long as the fruit, fruit elliptico-rotundate striated shortly mucronated. *Engl. Bot. t.* 2043. *Hook. Scot. i. p.* 265. *Engl. Fl. v. iv. p.* 102.

Bogs and marshes. Rare in England; mostly found in the northern and mountainous parts: more frequent in Scotland and Ireland. *Fl.* June. ♃.—*Root* creeping. *Stems* 8—10 inches high. *Leaves* very narrow. *Fertile spikes* 2; *cal. scales* dark brown, subapiculate. *Fruit* greenish-brown.

H. 32. C. *rariflóra*, Sm. (*loose-flowered alpine Carex*); sheaths very short almost none, fertile spikes narrow oblong very few-flowered lax pendulous, bracteas subsetaceous, calyx acute longer and broader than the fruit, fruit ovate somewhat acute striated. *Engl. Bot. t.* 2516. *Hook. Scot. i. p.* 265. *Engl. Fl. v. iv. p.* 100. —*C. limosa, γ. Wahl.*

Bog at the head of Glen Doll, Angus-shire; *Mr. G. Don. Fl.* June. ♃. —*Root* creeping, as in the last species. *Stems* about 6 inches high. *Leaves* about half the length of, but broader than the last, with which it has, I think, been improperly united by Wahlenberg. *Cal. scales* obtuse, very deep brown, with a pale dorsal line, and forming a striking contrast with the pale-coloured *fruit*.

H. 33. C. *Pseudo-cypérus*, Linn. (*Cyperus-like Carex*); sheaths scarcely any (except sometimes to the lowermost bractea), fertile spikes upon long footstalks cylindrical pendulous, bracteas very leafy, calyx setaceous, fruit oblong very much acuminate cloven at the tips striated. *Engl. Bot. t.* 242. *Hook. Scot. i. p.* 265. *Engl. Fl. v. iv. p.* 101.

Moist places, by the sides of lakes and ponds; not very general. *Fl.* June. ♃.—*Stems* 2—3 feet high, acutely triangular. *Leaves* half an inch wide.—One of the best marked and most beautiful species of the genus.

34. C. *ustuláta*, Willd. (*scorched alpine Carex*); sheaths elongated shorter than the flower-stalks, fertile spikes oval pendulous, bracteas scarcely leafy, fruit elliptical shortly acuminated (black) bifid at the point. *Engl. Bot. t.* 2404. *Hook. Scot. i. p.* 266. *Engl. Fl. v. iv. p.* 103.

On Ben Lawers, *Mr. G. Don. Fl.* July. ♃.—*Stem* about a span high, with broad, short *leaves*, principally from the base. *Fertile spikes* 2 or 3, on slender drooping stalks, and remarkable for their deep purple black colour.

35. C. *atráta*, Linn. (*black Carex*); sheaths scarcely any, fertile spikes pedunculated ovate inclined, the terminal one with sterile flowers at the base, bracteas subfoliaceous, fruit roundish ovate compressed with a beak bifid at the point. *Engl. Bot. t.* 2044. *Hook. Scot. i. p.* 266. *Engl. Fl. v. iv. p.* 103.

On the Welsh mountains; Snowdon, rare, *Mr. W. Wilson;* and on those of Breadalbane, Scotland, among wet rocks. *Fl.* June ♃.—About 1 foot high. *Leaves* unusually broad for the size of the plant. *Calyx-scales* dark brown, opaque. *Fruit* pale yellowish-brown.—Here there is no distinct and entirely *sterile spike*, but there are a few anther-bearing *scales* in the lower part of the terminal *fertile spike:* yet in general habit this plant perfectly agrees with the other species of the present division.

H. 36. C. *palléscens*, Linn. (*pale Carex*)*;* sheaths hardly any, fertile spikes pedunculated oblongo-cylindrical scarcely pendulous, bracteas subfoliaceous, fruit obovato-elliptical tumid striated obtuse glabrous. *Engl. Bot. t.* 2185. *Hook. Scot. i. p.* 266. *Engl. Fl. v. iv. p.* 105.

Marshy places, frequent. *Fl.* June. ♃.—A foot or more high. *Leaves* slightly downy. *Spikes* obtuse, pale green. *Fruit* very obtuse.

H. 37. C. *fláva*, Linn. (*yellow Carex*)*;* sheaths short about equal to the flower-stalks, bracteas long leafy, sterile spike distinctly stalked, fertile spikes roundish oval rather distant, fruit obovate turgid spreading with a long more or less deflexed beak bifid at the point. *Engl. Bot. t.* 1294. *Hook. Scot. i. p.* 266. (α.) *Engl. Fl. v. iv. p.* 107.

Turfy bogs, frequent. *Fl.* May, June. ♃.—6 to 8 inches or a foot high. *Bracteas* very foliaceous, the lower one resembling the broad acuminated *leaves. Spikes*, and indeed the whole plant, of a yellowish hue. Mr. Drummond finds this near Belfast, 12 to 14 inches high, with quite a straight *beak* and narrower leaves than usual.

H. 38. C. *Oedéri*, Ehrh. (*Oederian Carex*)*;* sheaths short about equal to the flower-stalks, bracteas long leafy, sterile spike almost sessile, fertile ones roundish oval approximate lower one subcompound, fruit obovate turgid spreading with a long nearly straight beak bifid at the point. *Engl. Bot. t.* 1773. *Engl. Fl. v. iv. p.* 107. *C. flava, β. Hook. Scot. i. p.* 266.

Bogs and moist heaths, frequent. *Fl.* May, June. ♃.—I scarcely see how this is to be distinguished from the last, but by the characters just mentioned, and these appear to me to depend very much upon the stunted growth of the plant, which is not more than 4 or 5 inches high; all the *spikes* also are more compact and almost clustered. Yet many of the most acute among our British Botanists consider it distinct; among them Mr. Dalton and Mr. W. Wilson, to whose authority I yield.

H. 39. C. *fúlva*, Gooden. (*tawny Carex*); sheaths elongated shorter than the peduncles, bracteas foliaceous, scales acute, fertile spikes oblongo-ovate distant, fruit broadly ovate ascending glabrous acuminated into a straight beak bifid at the point, stem scabrous. *Engl. Bot. t.* 1295. *Hook. Scot. i. p.* 266. *Engl. Fl. v. iv. p.* 107.

Boggy meadows, not unfrequent. *Fl.* June. ♃.—A foot high. It has the habit of *C. distans;* but is smaller, with shorter, more lax, paler coloured and fewer-flowered *spikes;* and acute, not mucronate, *calyx-scales.*

40. C. *exténsa*, Gooden. (*long-bracteated Carex*); sheaths very short (scarcely any) with extremely long foliaceous bracteas, fertile spikes nearly sessile oblong, scales slightly mucronate, fruit ovate striated with a short acuminated beak bifid at the point, leaves very narrow, stem smooth. *Engl. Bot. t.* 833. *Hook. Scot. i. p.* 267. *Engl. Fl. v. iv. p.* 108.

Marshes, rare, near the sea on the east and south of England. Near Liverpool and banks of the Menai, *Mr. W. Wilson.* On the coast of Fifeshire, *Mr. A. Chalmers.* In Ireland. *Fl.* June. ♃.—About 1 foot high. Quite distinct from *C. flava*, with which it has been confounded, in its very narrow convolute *leaves*, never spreading and short-beaked *fruit.*

H. 41. C. *dístans*, Linn. (*loose Carex*); sheaths elongated about equal to the flower-stalks with leafy bracteas, fertile spikes remote oblong erect, calyx mucronate, fruit ovate somewhat inflated subtriquetrous uniformly nerved with a rather short beak bifid at the point. *Engl. Bot. t.* 1234. *Hook. Scot. i. p.* 267. (*excl. the syn. C. binervis.*) *Engl. Fl. v. iv. p.* 109.

Muddy marshes, near the sea, probably in many places. About Anglesea, *Mr. W. Wilson*, who has supplied me with many specimens. Coast near Montrose, Scotland, *Mr. Drummond. Fl.* June. ♃.—From 8 inches to 1 and 2 feet high, slender. *Spikes* very distantly placed, their rather long *peduncles* entirely concealed by the sheathing bases of the *bracteas*. *Scales* of the *calyx* rather pale brown. *Fruit* green, inclining to brown when ripe.—Extremely near the following, if it be not the same, and Mr. W. Wilson observes, " I would gladly consider it a maritime state of the same plant." A plant very nearly allied to this species Mr. W. Wilson finds on the banks of the Menai, near Bangor, with the *spikes* shorter, the *fruit* smooth, shining, widely spreading and more decidedly beaked and more inflated below.

H. 42. C. *binérvis*, Sm. (*green-ribbed Carex*); sheaths elongated about equal to the flower-stalks with leafy bracteas, fertile spikes remote cylindrical the lower ones partly compound erect, scales mucronate, fruit ovate scarcely inflated rather acutely triquetrous with 2 principal (green) nerves near the margin at the back and a rather short beak bifid at the point. *Engl. Bot. t.* 1099. *Hook. Scot. i. p.* 267. (*under C. distans.*) *Engl. Fl. v. iv. p.* 110.

Dry heaths and moors, frequent. *Fl.* June. ♃.—Generally taller, and in every part more rigid, than the last. *Calyx-scales* and especially the *fruit*, more highly coloured, the latter more acutely triquetrous, with two nerves near the margin on the back, always green, though the rest of the fruit be more or less brown. But there are states of which Mr. W. Wilson and myself scarcely know whether they should be referred to the one or to the other.

H. 43. C. *prǽcox*, Jacq. (*vernal Carex*); sheaths short (scarcely any) equal to the flowerstalks, fertile spikes oblong approximate, scales elliptico-oblong, fruit obovate subtriquetrous acute downy. *Engl. Bot. t.* 1099. *Hook. Scot. i. p.* 267. *Engl. Fl. v. iv. p.* 111.

Dry pastures and heaths. *Fl.* Apr. May. ♃.—*Root* creeping. *Stems* 3 inches to a foot high. *Leaves* short, rather broad. Lower *bracteas* small, but leafy; upper ones very minute. Its numerous yellow *anthers* are conspicuous at an early season of the year.

H. 44. C. *pilulífera*, Linn. (*round-headed Carex*); sheaths none, bracteas small subfoliaceous, fertile spikes sessile roundish approximate, scales strongly mucronate, fruit obovato-globose acute and downy, stems weak scabrous. *Engl. Bot. t.* 885. *Hook. Scot. i. p.* 267. *Engl. Fl. v. iv. p.* 112.—*C. montana, Linn.*

Moory ground, frequent. *Fl.* June. ♃.—*Stems* varying much in height, from 6—12 inches, slender.—Readily distinguished by the pubescent, almost spherical *fruit*, which gives name to the species.

45. C. *tomentósa*, Linn. (*larger downy-fruited Carex*); sheaths scarcely any, fertile spikes about 2 nearly sessile shortly cylindrical obtuse with acute scales, fruit globose densely downy with a short beak scarcely bifid at the point. *Engl. Bot. t.* 2046. *Engl. Fl. v. iv. p.* 113.

Meadows near Merston Measey, Wiltshire, *Mr. Teesdale*. *Fl.* June. ♃.—A well marked and very rare species; no other station being known for it, in Britain, than that just mentioned, whence I have an original specimen given me by the *Rev. James Dalton.*

H. 46. C. *panicéa*, Linn. (*pink-leaved Carex*); sheaths elongated shorter than the flower-stalks, fertile spikes subcylindrical with distant flowers, bracteas foliaceous, fruit subglobose somewhat inflated obtuse glabrous entire at the point. *Engl. Bot. t.* 1505. *Hook. Scot. i. p.* 267. *Engl. Fl. v. iv. p.* 114. C. phæostachya.

Marshy places and bogs, common. *Fl.* June. ♃.—*Stems* 1 foot to 1½ foot high. *Leaves* rather broad, glaucous, rough at the edges, much resembling, as Sir James E. Smith observes, the foliage of *C. recurva;* but the characters of the two are widely different. *Calyx-scales* dark brown, the keel green. *Fruit* greenish-brown.

H. 47. C. *recúrva*, Huds. (*glaucous Heath Carex*); sheaths short scarcely any, bracteas leafy, fertile spikes cylindrical scarcely drooping densely imbricated on long slender stalks, fruit obovato-globose slightly downy entire at the small point. *Engl. Bot. t.* 1506. *Hook. Scot. i. p.* 268. *Engl. Fl. v. iv. p.* 114.—*C. Micheliana, Engl. Bot. t.* 2236. (*fruit glabrous.*) [illegible]

Moist meadows and moors and in groves. *Fl.* June. ♃.—*Leaves* mostly radical, very glaucous. *Stems* about 1 foot high. *Fertile spikes* 2 and *barren* ones often 2 or 3. *Fruit* closely placed, brownish when ripe.

†† *Styles* 2.

48. C. *púlla*, Gooden. (*russet Carex*); sheaths none, bracteas foliaceous, fertile spikes ovate obtuse the lower one stalked, scales oblong, fruit spreading elliptical inflated with a very short beak bifid at the point. *Engl. Bot. t.* 2045. *Hook. Scot. i. p.* 268. *Engl. Fl. v. iv. p.* 104.

Rare; near the source of springs on the higher regions of the Scottish mountains. Ben Lomond, *Mr. G. Don.* Breadalbane mountains, not unfrequent. Glen Tilt, *Mr. Anderson.* Mountains above Loch Scavig in Skye. *Fl.* June. ♃.—Six to 8 inches high. *Leaves* remarkably acuminated, slightly keeled at the back, with a trigonous point resembling some of the narrow-leaved species of *Eriophorum.* *Spikes* almost shaggy with the long white *stigmas.* *Scales* shining, of a deep chocolate brown. *Fruit* at first pale, dark brown when ripe.

H. 49. C. *cæspitósa*, Linn. (*tufted Bog Carex*); sheaths none, bracteas foliaceous auricled at the base, fertile spikes sessile cylindrical obtuse imbricated compact, fruit elliptical compressed with a very short entire point, leaves mostly erect narrow linear. *Engl. Bot. t.* 1507. *Hook. Scot. i. p.* 268. (*excl. syn. C. rigida ?*) *Engl. Fl. v. iv. p.* 117.

Marshes and wet pastures, frequent. *Fl.* May, June. ♃.—Eight inches to a foot high. "*Root* creeping, but not tufted. I suspect that it has been, in this respect, confounded with *C. stricta.* *Stem* with blunter angles than *C. rigida* or *C. stricta.* *Stigmas* nearly sessile on the corolla, spreading and flexuose, with coarse pubescence, similar to the following, but larger and more loose. *Cor.* sessile. *Fruit* without ribs (in a young state at least), also sessile. *Beak* like that of *C. rigida*, except that it is not cloven or notched." *Mr. W. Wilson.*

50. C. *rígida*, Gooden. (*rigid Carex*); sheaths none, bracteas foliaceous auricled at the base, fertile spikes subcylindrical obtuse loosely imbricated the lower one pedunculated, fruit obovate attenuated at the base slightly stalked with a very short entire point, leaves mostly recurved broadly linear. *Engl. Bot. t.* 2047. *Engl. Fl. v. iv. p.* 116.—*C. cæspitosa*, β. *Hook. Scot. i. p.* 268.——*C. saxatilis*, *Fl. Dan. Willd.* (but not of Linn., according to Smith.)

β. larger, leaves broader, spikes elongated.

Hab. On Snowdon, the Cheviots; and all the more elevated of the Highland hills, especially upon their summits. β. On the Clova mountains. *Mr.T.Drummond. Fl.* June, July.♃.—*Roots* creeping. 4—6 inches high; in β. nearly a foot.—"*Bracteas* often erect, not unfrequently recurved. *Stigmas* nearly or quite sessile, erect not spreading, minutely papillose. *Corolla* with a short stalk. Nearly allied to *C. cæspitosa;* nor is it distinguishable by any other marks than the broad *leaves*, stalked *corolla* and neatly formed, erect *stigmas*, which, if constant, may perhaps serve to keep it in the rank of a species." *Mr. W. Wilson.* I have preferred giving the remarks of my acute friend Mr. Wilson, made from living specimens, to my own: and from these I think it will be seen that it is at any rate a very doubtful species.

51. C. *stricta*, Gooden. (*straight-leaved Carex*); sheaths none, bracteas with small auricles at the base short subfoliaceous, fertile spikes nearly sessile cylindrical elongated closely imbricated often acuminated with barren flowers at the extremity, fruit ovate somewhat acute plane above on each side, on a very short stalk, stem acutely angular straight, leaves long straight narrow linear, their

bases often reticulated. *Engl. Bot. t.* 914. *Hook. Scot. i. p.* 268. *Engl. Fl. v. iv. p.* 118.—*C. cæspitosa, Huds.—Lightf.* β.

Marshes, common. *Fl.* Apr. May. ♃.—Two feet or more high. *Leaves* rough, filamentous at their sheathing bases. *Spikes* long, erect. *Cal. scales* lanceolate, dark brown. The *roots* are fibrous and tufted, and the plant is much taller than *C. cæspitosa.* The *fruit* comes gradually to a point, and the point or mouth Mr. Wilson observes to be beset with very minute spinules. The *fertile spike* he finds has very constantly 8 rows of fruit. ✻

****** *Barren and fertile flowers in separate spikes. Barren spikes 2 or more. Stigmas* 3. (*except in C. acuta.*)

52. C. *acúta*, Linn. (*slender-spiked Carex*); stigmas 2, sheaths none, bracteas long foliaceous, fertile spikes long cylindrical acuminate slender erect when in fruit, fruit oval swelling subacuminate entire at the point, stem acutely angular scabrous. *Engl. Bot. t.* 580. *Hook. Scot. i. p.* 269. *Engl. Fl. v. iv. p.* 119.—*C. gracilis, Curt.*

Moist meadows and wet pastures, frequent. *Fl.* May. ♃.—Two to 3 feet high. *Leaves* broad, scarcely glaucous, rough.

53. C. *paludósa*, Gooden. (*lesser common Carex*); sheaths none, bracteas very long foliaceous, calyx of the sterile spike obtuse, fertile spikes cylindrical obtuse, fruit oblongo-ovate acute bifid at the point striated. *Engl. Bot. t.* 807. *Hook. Scot. i. p.* 269. *Engl. Fl. v. iv. p.* 120.—*C. acuta, Curt.* H.

Banks of rivers and ditches, common. *Fl.* May. ♃.—Two feet or more high. *Leaves* very broad, keeled, rough.

H, 54. C. *ripária*, Curt. (*great common Carex*); sheaths none, bracteas very long foliaceous, scales of the sterile spikes acuminated, fertile spikes scarcely pedunculated broadly cylindrical acute, fruit oblongo-ovate striated subacuminated deeply bifid at the point. *Engl. Bot. t.* 579. *Hook. Scot. i. p.* 269. *Engl. Fl. v. iv. p.* 121. —*C. acuta, Huds.—Lightf.* my specimen had long peduncles

Sides of ditches and rivers, common. *Fl.* May. ♃.—Larger than the last, with much broader *leaves* and *spikes ;* and well distinguished by the acuminated *scales* of its *sterile spikes.*

H. 55. C. *lævigáta*, Sm. (*smooth-stalked beaked Carex*); sheaths elongated longer than the flower-stalks, bracteas foliaceous, fertile spikes drooping cylindrical, all the scales acuminated or mucronate, fruit ovate triangular striated with rather a long acuminated beak bifid at the point. *Engl. Bot. t.* 1387. *Hook. Scot. i. p.* 269. *Engl. Fl. v. iv. p.* 122.

Marshes and boggy thickets, in several places both in England and Scotland. Anglesea; *Mr. W. Wilson.* Near Belfast; *Mr. T. Drummond. Fl.* June. ♃.—One foot and a half high. *Leaves* broad, but rather short. It has rarely more than one *sterile spike:* but its similarity to the following species authorizes its being placed in this division.

✻. C. aquatilis.
Appen. 25.

If arranged in the section with "1 *sterile spike*," its station should be near *C. distans* and *C. binervis.*

H. 56. C. *vesicária*, Linn. (*short-spiked Bladder Carex*); sheaths none, bracteas foliaceous long, fertile spikes cylindrical slightly drooping, scales lanceolate, fruit broadly ovate inflated subulato-rostrate bifid at the point. *Engl. Bot. t.* 779. *Hook. Scot. i. p.* 269. *Engl. Fl. v. iv. p.* 123.

Bogs and marshes: apparently most frequent in the north. *Fl.* May, June. ♃.—One foot and a half to two feet high. *Leaves* rather broad. *Stems* acute, angular. *Fruit* tawny, very large, shining, much inflated.

H. 57. C. *ampullácea*, Gooden. (*slender-beaked Bottle Carex*); sheaths none, bracteas foliaceous, fertile spikes cylindrical long nearly erect, scales lanceolate, fruit crowded subglobose inflated setaceo-rostrate slightly bifid at the point. *Engl. Bot. t.* 780. *Hook. Scot. i. p.* 270. *Engl. Fl. v. iv. p.* 124.

Bogs and marshes; more abundant in Scotland than in England. *Fl.* June. ♃.—Differs from the last in the narrower *leaves*; longer and slenderer *spikes*, with much more numerous *flowers*; in the *fruit* which is brownish and not half so large, with a narrower *beak* and different shape.

H. 58. C. *hírta*, Linn. (*hairy Carex*); hairy, sheaths elongated nearly equal to the flower-stalks, bracteas long foliaceous, fertile spikes short cylindrical distant the scales cuspidate, fruit hairy ovate with a long beak. *Engl. Bot. t.* 685. *Hook. Scot. i. p.* 270. *Engl. Fl. v. iv. p.* 125.

Wet pastures and woods, frequent. *Fl.* May, June. ♃.—One foot to 2 feet high, more or less hairy in every part. Mr. D. Turner finds a *var.* in Yorkshire, with the lower part of the *fertile spike* compound.

H. 59. C. *filifórmis*, Linn. (*slender-leaved Carex*); glabrous, sheaths scarcely any, bracteas long very narrow, fertile spikes shortly pedunculate oblongo-cylindrical their scales cuspidate, fruit ovate shortly beaked deeply bifid at the point very pubescent. *Engl. Bot. t.* 904. *Hook. Scot. i. p.* 270. *Engl. Fl. v. iv. p.* 128.

Boggy marshes, rare, and chiefly found in Scotland. Anglesea, *Mr. W. Wilson.* *Fl.* June. ♃.—One to 2 feet high. *Leaves* slender; their margins involute, filamentous at their base near the roots.

60. C. *hordeifórmis*, Host, (*Barley Carex*); sheaths as long as the flower-stalks, bracteas foliaceous very long, sterile spikes about 2 remote, fertile oblong remote sessile, scales mucronate, fruit oblong acuminate striated rough at the margin deeply bifid at the point, stem smooth bluntly angular. *Host, Gram. Austr. v. i. p.* 57. *t.* 76. (1801).—*C. secalina, Wahl. Stockh. Trans.* 1803. 151. *Schkuhr, t. S. f.* 65. *Engl. Fl. v. iv. p.* 126.

Small valley about 3 miles west of Panmure, Forfarshire, amongst some bushes near a spring, rare; *Mr. T. Drummond.* *Fl.* June. ♃.—About 1 foot high, with very long *bracteas* over-topping all the *spikes*. *Sterile spikes* slender: *fertile ones* stout, erect, about 3, the two upper ones often approximate, the lower very remote. *Fruit* large, resembling a grain of barley, whence Host's appropriate name, which is, too, older than that of Wahlenberg. Host, indeed, quotes Thuillier and Villars for the same name: but Sprengel refers to the latter as *C. hordeistichos.*

61. C. *stictocárpa*, Sm. (*dotted Carex*); "fertile catkins 2 ovate stalked, scales pointed, sheaths scarcely any, fruit obovate obtuse pointless finely dotted." *Engl. Fl. v. iv. p.* 127.

Lofty mountains of Clova, Angus-shire, *Mr. G. Don. Fl.* June, July? ♃.—Of this plant I am quite ignorant, and its author had seen only a single specimen.

62. C. *angustifólia*, Sm. (*narrow-leaved Carex*); "fertile catkins one or two ovate stalked, scales obtuse, sheaths none, fruit ovate compressed smooth with a short abrupt beak, leaves linear channelled." *Engl. Fl. v. ii. p.* 127.

Marshes in Angus-shire, *Mr. G. Don. Fl.* June. ♃?—This too, is unknown to me. Sir J. E. Smith had seen but one specimen, "and that, none of the best." The *leaves* are described as approaching to *C. nardifolia*, Willd.; the *fruit* and *scales* to *C. stricta:* the *stigmas* were wanting.

8. ELÝNA. *Schrad.* Elyna.

Spikelets 2-flowered, upper one *sterile*, lower one *fertile*, included in a broad sheathing bractea, (sometimes 1 wanting,) and each within a convolute scale. *Cal.* 0. *Cor.* 0. *Barren fl. Stam.* 3. *Fertile fl. Pistil* 1. *Stigmas* 3. *Nut* obtusely trigonal, surrounded by its convolute scale.—In habit nearly allied to *Scirpus*, and still more closely to *Blysmus:* but the flowers are monœcious. It wants the urceolate corolla of *Carex.*—*Nat. Ord.* CYPERACEÆ. *Juss.*—Name; I presume from ελυω, to *involve* or *surround*, as the scale does the flower.

H. 1. E. *caricína*, M. et K. (*compound-headed Elyna*); spikelets aggregate compound. *Mert. and Koch, Fl. Germ. v. i. p.* 459.—*Kobresia caricina, Willd.*—*Engl. Fl. v. iv. p.* 129.—*Schœnus monoicus, Engl. Bot. t.* 1410.

Moors in Durham and Yorkshire. On Cronkley fell and about Widdy bank in Teesdale Forest. *Fl.* Aug. ♃.—Scarcely a span high, densely tufted, with narrow linear *leaves*, shorter than the naked *stem. Bracteas* and *scales* remarkably convolute, brown. *Germen* oblong, scarcely trigonal.—*E. scirpina* of the continent is a 2d species of this genus.

ORD. III. TETRANDRIA. 4 ~~3~~ *Stamens.*

9. LITTORÉLLA. *Linn.* Shore-weed.

Barren fl. Cal. of 4 leaves. *Cor.* 4-fid. *Stam.* very long. *Fertile fl. Cal.* 0. (unless 3 bracteæ can be so called). *Cor.* urceolate, contracted at the mouth. *Style* very long. *Caps.* 1-seeded.—*Nat. Ord.* PLANTAGINEÆ. *Juss.*—Name; *littus, the shore,* from its place of growth.

H. 1. L. *lacústris*, Linn. (*Plantain Shore-weed*). *Engl. Bot. t.* 468.

Hook. Scot. i. p. 271. *Engl. Fl. v. iv. p.* 130.—*Plantago uniflora. Linn. Sp. Pl.*

In watery, sandy, and stony places. Particularly abundant on the margin of the Highland lakes, where it forms a green turf. *Fl.* June. ♃. —*Leaves* all radical, linear, fleshy, semicylindrical, about 2 inches long. *Scapes* several. *Sterile fl.* solitary, sometimes 2, (*Mr. W. Wilson*), upon a *scape* 2—3 inches long. *Cor.* white, with the tube inflated. *Fertile flowers* sessile in the axils of the leaves, at the base of the sterile scape. *Germen* oblong, green. *Style* very long, filiform. *Stigma* a mere point.

10. ÁLNUS. *Tourn.* Alder.

Flowers collected into imbricated *catkins. Barren fl. Scale* of the *catkin* 3-lobed, with 3 *flowers. Perianth* single, 4-partite. *Fertile fl. Scale* of the *catkin* subtrifid, with 2 *flowers. Perianth* 0. *Styles* 2. *Nut* compressed.—*Nat. Ord.* AMENTACEÆ. *Juss.*—Name derived from the Celtic *al*, *near*, and *lan*, the *river-bank.*

1. A. *glutinósa*, Gært. (*common Alder*); leaves roundish cuneiform obtuse lobed at the margin and serrated somewhat glutinous downy in the axils of the nerves beneath. *Hook. Scot. i. p.* 271. *Hook. in Fl. Lond. N. S. t.* 59. *Engl. Fl. v. iv. p.* 131.—*Betula Alnus, Linn.*—*Engl. Bot. t.* 1508.

Wet meadows and moist grounds by water. "The alders dank that fringe the pool;" frequent. *Fl.* March, Apr. ♄.—A well known *tree*, whose wood is employed for various purposes and is particularly valuable for the piles of bridges, as it remains under water, undecayed, for a considerable length of time; thus, the celebrated and ancient bridge called the Rialto, at Venice, is built on Alder-piles; as are many large edifices at Amsterdam. The *bark* and *leaves* are employed in dyeing and tanning leather: the former for staining *sabots* (which are also made of the tree) or wooden shoes, and fishermen's nets; its astringent quality strongly recommending it for the latter purpose.—*Sterile catkins* long, large and cylindrical, pendent, their *footstalks* branched. *Fertile catkins* small, ovate, with deep-red scales.

11. BÚXUS. *Linn.* Box.

Flowers clustered, axillary. *Barren fl. Perianth* single, of 4 leaves, two opposite ones smaller: (with one *bractea* at the base). Rudiment of a *germen. Fertile fl. Cal.* as in the *barren fl.* (with 3 bracteas at the base). *Styles* 3. *Caps.* with 3 beaks, 3-celled; *cells* 2-seeded.—*Nat. Ord.* EUPHORBIACEÆ. *Juss.*—Name; altered from πυξος, the Greek name for the tree.—This tree is the badge of the Highland clan *Macintosh.* The variegated kind marks the clan *Macpherson.*

1. B. *sempervírens*, Linn. (*common Box-tree*); leaves oval oblong retuse convex coriaceous shining, their stalks slightly hairy, anthers ovato-sagittate. *Engl. Bot. t.* 1341. *Engl. Fl. v. iv. p.* 133.

Dry chalk hills, principally in the south of England. *Fl.* April. ♄. —A small *tree*, if suffered to reach its natural stature. A dwarf *var.* is extensively employed as edgings in gardens. The *wood* is of great value for turning, carving, and engraving upon.

+ 12. URTÍCA. *Linn.* Nettle. Ang. Saxon - Noedl, a needle.

Barren fl. Perianth single, of 4 leaves, containing the cup-shaped rudiment of a *pistil. Fertile fl. Perianth* single, of 2 leaves. *Pericarp* 1-seeded, shining.—*Nat. Ord.* URTICEÆ. *Juss.*—Name; from *uro*, to *burn*, in allusion to its stinging property.

1. U. *pilulífera*, Linn. (*Roman Nettle*); leaves opposite ovate serrated with transverse nerves, fertile flowers in globular heads. *Engl. Bot. t.* 148. *Engl. Fl. v. iv. p.* 134. β. U. Dodartii, leaves nearly entire. E. of Eng

Under walls and among rubbish, principally near the sea. In Norfolk and Suffolk. Ballylickey, south of Ireland; *Miss Hutchins. Fl.* June, July. ⊙.—The most venomous of our British *Nettles.* rare - probably imported by the Roman

H. 2. U. *úrens*, Linn. (*small Nettle*); leaves opposite elliptical with about 5 nearly parallel ribs, clusters of flowers sub-simple. *Engl. Bot. t.* 1236. *Hook. Scot. i. p.* 271. *Engl. Fl. v. iv. p.* 134.

Waste places and cultivated ground, frequent. *Fl.* June—Oct. ⊙.

3. U. *dióica*, Linn. (*great Nettle*); leaves ovate acuminate cordate at the base, clusters much branched in pairs mostly diœcious. *Engl. Bot. t.* 1750. *Hook. Scot. i. p.* 271. *Engl. Fl. v. iv. p.* 135.

Waste places, under walls and hedge-banks, frequent. *Fl.* July, Aug. ♃. The *root*, boiled with alum, dyes yarn of a yellow colour; from the fibres of the stalk a kind of hemp is manufactured, as with the *Urtica cannabina* of N. America. In Scotland the young tops of the nettles are boiled and eaten by the common people. "Nae doubt I should understand my ain trade of horticulture, seeing I was bred in the parish of Dreepdaily, near Glasco', where they raise lang-kail under glass and force the *early nettles* for their spring-kail."—*Andrew Fairservice in Rob Roy.*

(*See* Eriocaulon *in* ORD. V. Myrica *in* CL. XXII.)

ORD. IV. PENTANDRIA. 5 *stamens.*

13. XÁNTHIUM. *Linn.* Bur-weed.

Barren fl. Involucre of few scales, with many small, capitate *flowers*, upon a common receptacle. *Cal.* 0. *Cor.* obovate, sessile. *Anther* terminating a tube which is inserted at the base of the cor. *Germen* 0. The rudiment of a *style. Fertile fl. Involucre* single, prickly, with 2 beaks, entirely enclosing 2 flowers; the 2 *stigmas* only protruded from small apertures within the beaks. *Cal.* 0. *Cor.* 0. *Fruit* 1-seeded, included in the enlarged and hardened *involucre.*—*Nat. Ord.* COMPOSITÆ. *Juss.* (Div. AMBROSIEÆ. *Cass.*).—Name: ξανθος, *yellow*, or *fair*, because an infusion of it was supposed to improve the colour of the hair.

1. X. *strumárium*, Linn. (*broad-leaved Bur-weed*); stem unarmed, leaves cordate angulato-dentate with 3 principal nerves at the base, beaks of the fruit straight the prickles hooked. *Engl. Bot. t.* 2544. *Engl. Fl. v. iv. p.* 136.

+ At least 50 species of insects feed on the common nettle. Roget II. 59. The stalks are as good as flax. Increases milk in cows. evolves great heat in fermentation. Its own juice instantly allays the irritation of the sting, as do Dock leaves, Rumex. Lady Wilkinson

Rare in waste ground in the south of England, and county of Kerry, Ireland; *Mr. Smith. Fl.* Aug. Sept. ⊙.—A rank, weed-like plant, remarkable for the curious structure of its *flowers,* and the prickly involucres which surround the *fertile* ones, enlarging and becoming part of the *fruit.*

14. AMARÁNTHUS. *Linn.* Amaranth.

Barren fl. Perianth single, deeply 3—5 partite. *Stem* 3—5. *Fertile fl. Perianth* single, deeply 3—5 partite. *Styles* 3 or 2. *Capsule* of 1 cell, 1 seed, bursting all round transversely.—*Nat. Ord.* AMARANTHACEÆ. *Juss.*—Name; *α, not, μαραινω, to fade,* or, flowers which do not fade.

1. A. *Blítum,* Linn. (*wild Amaranth*); flowers 3-cleft and triandrous in small lateral clusters, the segments very obtuse, leaves ovate obtuse, stem spreading. *Engl. Bot. t.* 2212. *Engl. Fl. v. iv. p.* 137.

Low waste grounds and near dunghills: about Cambridge, London, and in Huntingdonshire. *Fl.* Aug. ⊙.

15. BRYÓNIA. *Linn.* Bryony.

Barren fl. Cal. 5-toothed. *Cor.* 5-cleft. *Filaments* 3. *Anthers* 5. *Fertile fl. Cal.* 5-dentate. *Cor.* 5-cleft. *Style* trifid. *Berry* inferior, globose, many-seeded.—*Nat. Ord.* CUCURBITACEÆ. *Juss.*—Name; *βρυω, to shoot* or *grow rapidly,* in allusion to the quick growth of the stems.

1. B. *dioíca,* Jacq. (*red-berried Bryony*); leaves palmate rough on both sides, flowers diœcious. *Engl. Bot. t.* 439. *Hook. Scot. i. p.* 272. *Engl. Fl. v. iv. p.* 138.

Thickets and hedges, frequent in England; scarcely indigenous in Scotland. *Fl.* May. ♃.—*Root* very large, white and branched. *Stem* long, slender, branched, weak and climbing, with simple *tendrils. Leaves* large. *Flowers* in axillary bunches. *Cor.* whitish, with green veins. *Berries* red. The plant abounds with a fetid and acrid juice.

(*See* Fagus *and* Quercus *in* ORD. POLYANDR. Atriplex *in* POLYGAMIA.)

ORD. V. HEXANDRIA. 6 *Stamens.*

16. ERIOCÁULON. *Linn.* Pipewort.

Flowers collected into a compact, scaly *head. Barren fl.* in the centre. *Perianth* single, 4—6 cleft, the *inner segments* united nearly to their summit. *Stam.* 4—6. *Fertile fl.* in the circumference. *Perianth* single, deeply 4-partite. *Style* 1. *Stigmas* 2—3. *Capsule* 2—3 lobed, 2—3 celled. *Cells* 1-seeded.—*Nat. Ord.* RESTIACEÆ. *Br.*—Name; *εριον, wool,* and *καυλος,* the *stem;* in allusion to the downy stems of the species first known.

1. E. *septanguláre,* With. (*jointed Pipewort*); scapes striated

Linnaeus knew of only 5 species of Eriocaulon while Mr Gardner found 100 in Brazil alone - many are large plants 4 to 6 feet high -

longer than the cellular compressed subulate glabrous leaves, flowers 4-cleft hairy at the extremities as well as the scales, stamens 4, capsule 2-celled. *Engl. Bot. t.* 733. *Hook. in Fl. Lond. N. S. t.* 52. *Hook. Scot. i. p.* 270. *Engl. Fl. v. iv. p.* 140.

Lakes in mountainous countries, rare. In Skye, (*Dr. Hope,*) Coll (*Dr. M'Culloch*) and a few of the neighbouring islands of the Hebrides. South-west of Ireland, frequent; *Dr. Wade* and *Mr. J. T. Mackay. Fl.* August. ♃.—*Roots* creeping and throwing out innumerable, white, curiously articulated *fibres*, which penetrate deep into the mud. *Leaves* pellucid, beautifully cellular, as is the *scape. Head* of numerous, compact, minute *flowers;* each with an obovate, membranous, concave *scale*, nearly as long as itself. *Two outer segments* of the *perianth* duplicato-carinate, purplish; *two inner* white, of the central *sterile flowers* united for a great portion of the length, so as to be two-lipped at the extremity; each *lip* bearing a *stamen;* and above that a black sessile *gland;* and on each side, between the two lips, a *stamen:* in the centre between these are 2 black, stalked glands, (abortive *styles?*) In the fertile flowers, the 4 segments are almost equally divided to their base, the inner having a black, sessile gland at the extremity. *Pistil* shortly stipitate. *Germen* of 2 globose lobes. *Style* short. *Stigmas* 2, long, subulate.—In the Flora Londinensis figure I have not represented the sterile flower correctly, as to its usual appearance; nor the situation of the *gland*, which is not below, but above, the point of insertion of the *stamen.*

(*See* Quercus *in* ORD. POLYANDRIA.)

ORD. VI. POLYANDRIA. *Many stamens.*

17. CERATOPHÝLLUM. *Linn.* Hornwort.

Barren fl. Cal. inferior, multipartite. *Cor.* 0. *Stam.* 16—20. *Fertile fl. Cal.* multipartite. *Cor.* 0. *Germen* 1. *Style* filiform, curved. *Stigma* simple. *Nut* superior, 1-seeded.—*Nat. Ord.* CERATOPHYLLEÆ. *Gray.*—Name; κερας, κερατος, a *horn*, from the spines of the fruit.

H. 1. C. *demérsun*, Linn. (*common Hornwort*); fruit armed with 2 spines near the base and terminated by the curved subulate style. *Engl. Bot. t.* 947. *Hook. Scot. i. p.* 272. *Engl. Fl. v. iv. v.* 141.

Frequent in slow streams and ditches. *Fl.* July. ♃.—Floating. *Stem* long, slender. *Leaves* setaceous, whorled, 2 or three times forked, distantly serrated. *Flowers* whorled, in the axils of the leaves, small. *Anthers* sessile, crowded, spotted, two-beaked, 2-celled.—The foliage of this plant is often inflated and jointed, so as to look like a *Conferva.*

2. C. *submérsum*, Linn. (*unarmed Hornwort*); fruit without spines. *Engl. Bot. t.* 947. *Hook. Scot. i. p.* 272. *Engl. Fl. v. iv. p.* 142.

Ditches, in the east and south of England. *Fl.* Sept. ♃.—Scarcely different from the preceding, but in the absence of spines on the fruit.

18. MYRIOPHÝLLUM. *Linn.* Water-Milfoil.

Barren fl. Cal. inferior, of 4 leaves. *Pet.* 4. *Stam.* 8. *Fertile fl. Cal.* of 4 leaves. *Pet.* 4. *Stigmas* 4, sessile. *Nuts* 4, sessile, subglobose, 1-seeded.—*Nat. Ord.* HALORAGEÆ. *Br.*—Name; μυϱιος, a *myriad*, and φυλλον, a *leaf*, from its numerous leaves.

H. 1. M. *spicátum*, Linn. (*spiked Water-Milfoil*); sterile flowers forming an interrupted leafless spike. *Engl. Bot. t.* 83. *Hook. Scot. i. p.* 272. *Engl. Fl. v. iv. p.* 143.

Ditches and stagnant waters. *Fl.* July, Aug. ♃.—*Stems* slender, much branched. *Leaves* 4 in a whorl, finely pectinated and always submerged. *Spikes* slender, 3—5 inches long.

H. 2. M. *verticillátum*, Linn. (*whorled Water-Milfoil*); flowers all axillary. *Engl. Bot. t.* 83. *Hook. Scot. i. p.* 143. *Engl. Fl. v. iv. p.* 143.

Ponds and ditches in Norfolk and Cambridgeshire. Cheshire; *Mr. W. Wilson.*—*Fl.* July. ♃.

19. SAGITTÁRIA. *Linn.* Arrow-head.

Barren fl. Cal. 3-leaved. *Pet.* 3. *Stam.* numerous. *Fertile fl. Cal.* 3-leaved. *Pet.* 3. *Pistils* very numerous, collected into a *head*. *Pericarps* 1-seeded, compressed, margined.—*Nat. Ord.* ALISMACEÆ. *Rich.*—Named from *sagitta*, an *arrow*, from the shape of the leaves.

H. 1. S. *sagittifólia*, Linn. (*common Arrow-head*); leaves arrow-shaped, the lobes lanceolate straight. *Engl. Bot. t.* 84. *Engl. Fl. v. iv. p.* 144.

Ditches and margins of rivers in England, and Ireland. *Fl.* July, Aug. ♃.—A beautiful aquatic, with large, truly arrow-shaped *leaves*, rising above the surface of the water.

20. ÁRUM. *Linn.* Cuckow-pint.

Spatha of one leaf, convolute at the base. *Perianth* 0. *Spadix* with germens at the base. *Stam.* (sessile) near the middle of the *spadix*, which is naked above. *Berry* with 1 *cell* and many *seeds.*—*Nat. Ord.* AROIDEÆ. *Juss.*—Name; formerly written *Aron*, and supposed to be an ancient Egyptian word by which one of this tribe was known. evolves heat so as to be felt by the hand for several hours after its first expansion

H. 1. A. *maculátum*, Linn. (*Cuckow-pint or Wake-robin*); leaves all radical hastato-sagittate, lobes deflexed, spadix club-shaped obtuse shorter than the spatha. *Engl. Bot. t.* 1298. *Hook. Scot. i. p.* 272. *in Curt. Fl. Lond. ed.* 2. *cum Ic. Engl. Fl. v. iv. p.* 146.

Groves and hedges, frequent in England; rare in Scotland and Ireland. *Fl.* Apr. May. ♃.—*Root* a *tuber*, affording an abundant amylaceous substance; which, if properly prepared and the acrid juice expressed, proves an excellent substitute for bread-flour and is sold for that purpose in great abundance at Weymouth and in Portland Island. *Leaves* large, shining, often spotted with black. *Spatha* large, convolute. Above the *germens*, on the *spadix*, is a ring or circle of 2-celled, sessile *anthers*, and above these, another ring of apparently imperfect *germens*. The extremity of the *spadix* is purplish. *Berries* remaining during winter, after the leaves and spadix have decayed; crowded into an oblong spike of a bright scarlet colour.

21. Potérium. *Linn.* Salad-Burnet.

Flowers collected into a head, with 3 (or 4) bracteas at the base of each: upper ones fertile. *Barren fl. Cal.* of 4 deep segments. *Cor.* 6. *Stam.* 30—40, with very long, flaccid filaments. *Fertile fl. Cal.* tubular, contracted at the mouth, with 4 deciduous teeth. *Pistils* 2. *Stigmas* tufted. *Pericarps* two, 1-seeded, invested with the hardened 4-angled tube of the calyx.—*Nat. Ord.* Rosaceæ. *Juss.*—Name from *poterium*, a *drinking cup:* the plant having been used in the preparation of a drink, called in England a *cool-tankard.*

H, 1. P. *Sanguisórba*, Linn. (*common Salad-Burnet*); spines none, stem somewhat angular. *Engl. Bot. t.* 860. *Hook. Scot. i. p.* 273. *Engl. Fl. v. iv. p.* 147.

Dry and most frequently chalky pastures, abundant. Rather rare in Scotland and Ireland. *Fl.* July. ♃.—One to 2 feet high. *Leaves* pinnate, with ovate, serrated *leaflets. Flowers* dull purplish.—The leaves taste and smell like cucumber, and are eaten in salad.

22. Quércus. *Linn.* Oak.

Barren fl. in a lax *catkin* or *spike. Perianth* single, 5—7 cleft. *Stam.* 5—10. *Fertile fl. Involucre* of many little scales, united into a *cup. Perianth* single, closely investing the germen, 6-toothed. *Germen* 3-celled. *Style* 1. *Stigmas* 3. *Nut* (or *acorn*) 1-celled, 1-seeded, covered by the persistent, enlarged perianth, and surrounded at the base by the enlarged cup-shaped involucre.—*Nat. Ord.* Amentaceæ. *Juss.*—Named from the *Celtic quer, beautiful*, and *cuez*, a *tree.* It produced the Misseltoe of the *Druids*, and was thence called also *derw;* hence δρυς, in Greek, and *Dryades.*

The *Oak* (Darach, Gael.) is the badge of the Highland Clan *Cameron.*

1. Q. *Róbur*, Linn. (*common British Oak*); leaves deciduous shortly stalked oblongo-obovate deeply sinuate their sinuses rather acute lobes obtuse, fruits 2—3 upon a long peduncle. *Engl. Bot. t.* 1342. *Hook. Scot. i. p.* 273. *Engl. Fl. v. iv. p.* 149.—*Q. pedunculata, Willd. and foreign authors.—Q. racemosa, Lam.*

Woods and hedges. *Fl.* Apr. May. ♄.—The uses of this most important of trees are universally known. Its *acorns* were formerly the food of our British ancestors, but are now left to hogs and squirrels or the larger gallinaceous birds. The word *Robur* is derived from *rove*, another Celtic word for the *oak:* whence arises *robur, strength* in Latin.

2. Q. *sessiliflóra*, Salisb. (*sessile-fruited Oak*); leaves deciduous on long stalks oblongo-obovate deeply sinuate their sinuses rather acute lobes obtuse, fruits clustered upon a very short stalk or sessile. *Engl. Bot. t.* 1845. *Hook. Scot. i. p.* 273. *Engl. Fl. v. iv. p.* 150. —*Q. Robur, Willd. and most of the continental authors.*

Woods and hedges, not uncommon. *Fl.* Apr. May. ♄.—The specific name is calculated to mislead. The *flowers* are sessile in both species. But here, the *catkin* or *spike* is almost or quite sessile; in *Q. Robur*, on a long peduncle.—The wood of the present species is said to be much inferior to the last: and a general opinion having prevailed that it has been the most extensively planted, especially in Scotland, no little alarm was in consequence excited, lest our forests should be thereby deteriorated. We know, however, that the noble proprietor of some of the most extensive oak plantations in the west of Scotland, has ascertained such not to be the case, in his domains. Then, on the other hand, we are aware that an eminent modern author has lately expressed his opinion that it is the *Q. sessiliflora* which yields the best timber for shipping. It is a subject that deserves the most serious consideration of the planter.

23. Fágus. *Linn.* Beech.

Barren fl. in a globose *catkin. Perianth* single, of 1 leaf, campanulate, 6-cleft. *Stam.* 5—12. *Fertile fl.* 2, within a 4-lobed prickly *involucre. Perianth* single, urceolate, with 4—5 minute lobes. *Germen* incorporated with the perianth, 3-celled, 2 becoming abortive. *Styles* 3. *Nuts* 1-seeded, invested with the enlarged involucre.—*Nat. Ord.* Amentaceæ. *Juss.*—Name; φαγος, in Greek, from φαγω, *to eat*, on account of the nutritive qualities of the fruit.

1. F. *sylvática*, Linn. (*Beech tree*); leaves ovate glabrous obsoletely dentate their margins ciliated. *Engl. Bot. t.* 1846. *Hook. Scot. i. p.* 274. *Engl. Fl. v. iv. p.* 152.

Woods, especially in chalky soils. Scarcely wild in Scotland: but abundant in forests in the south of England. *Fl.* Apr. May. ♄.—The tree bears clipping, and then, as Mr. Stewart Murray observes, the *leaves* are retained during winter. The *wood* is employed for an infinity of purposes, by carpenters, turners, wheelwrights, &c. Swine are driven into the forests of *Beech* to feed upon the *mast* in Autumn.

24. Castánea. *Tourn.* Chestnut.

Barren fl. in a very long cylindrical *catkin. Perianth* single, of 1 leaf, 6-cleft. *Stam.* 5—20. *Fertile fl.* 3, within a 4-lobed, thickly muricated *involucre. Perianth* single, urceolate, 5—6 lobed, having the rudiments of 12 *stam. Germen* incorporated with the *perianth*, 6-celled, each cell 2-seeded, 5 of the cells mostly abortive. *Styles* 6. *Nut* 1—2-seeded, invested with the enlarged *involucre.*—*Nat. Ord.* Amentaceæ. *Juss.*—Named from *Castanea*, in Thessaly, which produced magnificent *Chestnut* trees.

H. 1. C. *vulgáris*, Lam. (*Spanish Chestnut*); leaves oblongo-lanceolate acuminate mucronato-serrate glabrous on each side. *Hook. Scot. i. p.* 273.—*Fagus castanea, Linn.*—*Engl. Bot. t.* 886. *Engl. Fl. v. iv. p.* 151.

Woods, apparently wild, in the south and south-west of England. *Fl.* May. ♄.—This noble tree is much cultivated in plantations on account of its timber, of which Evelyn says, "it hath formerly built a good part of our ancient houses in the city of London," and that he had "one large barn near the city entirely framed of it." The church of St. Nicholas at Great Yarmouth, erected in the reign of Wm. Rufus, is roofed with chestnut. It affords excellent stakes for palisades and props for vines and hops. It is good for mill-timber and for water-works: but if water touch the root of the growing tree, it spoils both the fruit and timber. The fruit is used as an article of daily food in the S. of Europe, and in parts of France I have had it served up for breakfast, boiled in milk.

25. Bétula. *Linn.* Birch.

Barren fl. in a cylindrical *catkin;* its scales 3-flowered. *Perianth* 0. *Stam.* 10—12. *Fertile fl.* Scale of the *catkin* imperfectly 3-lobed, 3-flowered. *Perianth* 0. *Styles* 2. *Germen* compressed, with 2 cells, 1 of which is abortive. *Nuts* compressed, with a membranaceous margin, 1-seeded.—*Nat. Ord.* Amentaceæ. *Juss.*—Name, derived from *betu,* the Celtic name for the birch.

The Birch (*Beatha* in Gael.) is the badge of the Highland Clan *Buchanan.*

1. B. *álba,* Linn. (*common Birch*); leaves ovato-deltoid acute doubly serrated glabrous. *Engl. Bot. t.* 2198. *Hook. Scot. i. p.* 274. *Engl. Fl. v. iv. p.* 153.

Woods, especially in heathy soils and in mountainous countries. *Fl.* Apr. May. ♄.—There is a *var.* of this tree, with remarkably drooping B. pendula branches which are more verrucose than in the common appearance, not unfrequent in the Highlands of Scotland, and generally known by the name of the *drooping birch.* To this Scott alludes;

> "Where weeps the *Birch* of silver bark,
> With long dishevelled hair."

The wood is tough and white and employed for various purposes. Much is burnt into charcoal. Brooms are made of it and well-known instruments of castigation. Of the bark, in some countries, hats and drinking cups are formed, and what is of more consequence, the oil obtained from the *degot,* or "*white rind,*" is used in tanning the well-known *Russia leather.* It is moreover employed by the same people as a vermifuge, and a balsam in the cure of wounds. A wine is made of the sap in Scotland. The whole tree diffuses an agreeable odour, and is noticed by Burns as the "*fragrant birk.*"

2. B. *nána,* Linn. (*dwarf Birch*); leaves orbicular crenate. *Engl. Bot. t.* 2326. *Hook. Scot. i. p.* 274. *Engl. Fl. v. iv. p.* 154.

In several parts of the Highlands of Scotland. Rare in the Lowlands. *Fl.* May. ♄.—This is a small shrubby plant, not exceeding 1—2 feet in height. The *leaves* are on short footstalks. *Fertile catkins* at the extremity of the branches, small.—Even this humble shrub the poor Laplander turns to account. It is almost all he meets with in certain situations that can be converted into fuel for cooking food and driving away the gnats, and covered with Rein-deer's skin, it serves him for a bed.

26. CARPÍNUS. *Linn.* Hornbeam.

Barren fl. in a cylindrical *catkin;* its scales roundish, ciliated at the base. *Stam.* 8—20. *Fertile fl.* in a lax *catkin;* its scales large, foliaceous, 3-lobed, 1-flowered. *Involucre* 0. *Perianth* of 1 leaf, urceolate, 6-dentate, incorporated with the 2-celled *germen*, of which 1 cell is abortive. *Styles* 2. *Nut* ovate, striated, 1-seeded.—*Nat. Ord.* AMENTACEÆ. *Juss.*—Name; *car*, *wood*, and *pin*, a *head*, in Celtic: wood employed to make the yokes of oxen.

1. C. *Bétulus*, Linn. (*Hornbeam*); scales or bracteas of the fruit oblong serrated with 2 smaller lateral lobes. *Engl. Bot. t.* 2032. *Hook. Scot. i. p.* 274. *Engl. Fl. v. iv. p.* 156.

In woods and hedges, in a meagre, damp, tenacious soil. It forms a principal part of the ancient forests on the north and east sides of London. (*Sm.*). *Fl.* May. ♄.—Rather a small *tree*, with ovate or subcordate, doubly-serrated, acute *leaves*, of which the veins are somewhat hairy, and which are beautifully plaited when young. The wood of the Hornbeam is white, tough and hard, and burns like a candle. It is used in turnery work, for implements of husbandry, cogs of wheels, &c. The inner *bark* yields a yellow dye.

27. CÓRYLUS. *Linn.* Hasel-nut.

Barren fl. in a cylindrical *catkin*; its scales 3-cleft. *Perianth* 0. *Stam.* 8. *Anthers* 1-celled. *Fertile fl.* *Perianth* obsolete. *Germens* several, surrounded by a scaly involucre. *Stigmas* 2. *Nut* 1-seeded, invested at the base with the enlarged, united, coriaceous scales of the involucre.—*Nat. Ord.* AMENTACEÆ. *Juss.*—Name; *κορυς*, a *casque* or *cap:* the fruit, with its involucre, appearing as if covered with a bonnet.

The *Hasel* is the badge of the Highland Clan *Colquhoun.*

1. C. *Avellána*, Linn. (*common Hasel-nut*); stipules oblong obtuse, leaves roundish cordate pointed, involucre of the fruit campanulate rather spreading torn at the margin. *Engl. Bot. t.* 723. *Hook. Scot. i. p.* 275. *Engl. Fl. v. iv. p.* 157.

Hedges and copses, abundant. *Fl.* March, Apr. ♄.—The wood of Hasel is employed for a number of domestic and agricultural purposes, and makes an excellent charcoal for drawing. The nuts are well known at our tables. The young forked twigs of this plant constitute the celebrated divining-rod, (*virgula divinatoria*): for an account of which see No. 44. of the *Quarterly Review.* From the Anglo-Saxons we have derived our word *Hasel-nut*, which they called *Hasl-nutu*, from *Hasel*, a *cap*, and *Knutu*, a *nut*.

ORD. VII. MONADELPHIA. *Stamens united into one set.*

28. Pínus. *Linn.* Fir.

Barren fl. in crowded, racemose *catkins;* the scales peltate, bearing 2, 1-celled, sessile *anthers.* *Perianth* 0. *Fertile fl.* in an ovate *catkin;* its scales closely imbricated, 2-flowered. *Perianth* 0. *Pericarp* 1-seeded, terminated by a long winged appendage, and covered with the imbricated scales, forming a *cone* (*strobilus*).—*Nat. Ord.* Amentaceæ. *Juss.*—Name; *pin* or *pen*, means *a crag* or stony mountain, still so called in Wales: (as *Ben* in Scotland): where the *pine* delights to grow, " moored in the rifted rock."

The pine is the badge of the Clan *M'Gregor.*

1. P. *sylvéstris,* Linn. (*Scotch Fir*); leaves in pairs rigid, cones conico-ovate acute young ones stalked recurved as long as the leaves generally in pairs, crest of the anthers very small. *Engl. Bot. t.* 2460. *Hook. Scot. i. p.* 275. *Engl. Fl. v. iv. p.* 158.

Highlands of Scotland, where it constitutes vast natural forests. *Fl.* May, June. ♃.—A *tree* of great value but little beauty, except indeed when it grows in large masses, as in some of the Highland forests. It affords the red or yellow deal. A plank from the largest tree that was cut down in the Duke of Gordon's forests of Glenmore, was shown to me by the late Duke at Gordon Castle; it measured 5½ feet in diameter. The *bark* has been used with much success in tanning, and in the north of Europe is made into a wretched substitute for bread. Tar, pitch and turpentine are the produce of this tree; and in the Highlands, the resinous roots dug up in the bogs afford a succedaneum for candles.

CLASS XXII. DIŒCIA.

14 - [illegible]

Stamens and pistils in separate flowers and on different plants.

(Monandria. 1 Stamen. *For some* Salices *see* Ord. II.)

ORD. I. DIANDRIA. *Stamens* 1—5, *mostly* 2.

1. Sálix. *Linn.* Willow, Sallow and Osier.

Barren fl. *Scales* of the *catkin* single-flowered, imbricated with a nectariferous gland. *Perianth* 0. *Stam.* 1—5.—*Fertile fl.* *Scales* of the *catkin* single-flowered, imbricated with a nectariferous *gland.* *Perianth* 0. *Stigmas* 2, often cleft. *Caps.* 1-celled, 2-valved, many-seeded. *Seeds* comose.—*Nat. Ord.* Amentaceæ. *Juss.*—Name; *sal, near,* and *lis, water,* in Celtic: denoting a tree which grows near water.—The *sallow, seileach* in Gaelic, is the badge of the Highland Clan *Cumming.*

The many important uses, rendered by the different species of *Willow* and *Osier*, serve to rank them among the first in our list of œconomical plants. The larger kinds, which are too of the most rapid growth, yield timber and exceed 60 feet in height; whilst the least of them, which grows at the summits of our Highland mountains, (*S. herbacea,*) can scarcely be said to rise above the surface of the soil in which it vegetates. Many are in great request for baskets, hoops, and crates: their bark is used by the tanner, and that of one species (*S. Russelliana*), as a substitute for the true Peruvian bark. A correct knowledge of the species, then, is of primary importance; no less to the cultivator than to the botanist. Yet there is not in the whole range of the vegetable creation, a genus, liable to more variation at different periods of growth, in different soils and situations and under different circumstances, so that the correct determination of its species has baffled the researches of the ablest botanists. For myself, I acknowleged that I apply to the description of them for the present work with no feigned reluctance; the more genuine from a consciousness that in my *Flora Scotica*, I had unfortunately given offence to one who was infinitely my superior, both in age and learning, the estimable author of the *English Flora;* by stating my opinion too confidently in regard to the limits of species. I will not say that a more devoted attention to the subject has materially altered my opinion on the points in question; but I have here pursued a different line of conduct, and at least when the union of any two or more species may be considered a dubious procedure, I have adopted the species of my illustrious predecessor, and given my ideas (and those of other friends, when I could obtain them,) on the propriety of the measure, in language, I trust, not calculated to hurt the feelings of any one.

My able friend Mr. Borrer has materially aided me by specimens and by remarks, and no one has ever studied the willows more deeply or with a less prejudiced mind, both in the dried and living state. He has himself extensively cultivated them; but the richest collection of living willows is, unquestionably, that at Woburn Abbey, Bedfordshire, which has given rise to a splendid work the "*Salictum Woburnense*" of His Grace the Duke of Bedford, of which a limited number of copies only have been printed. It is truly gratifying to the humbler botanist to find a man of that nobleman's exalted rank in society and the senate, not disdaining to take pleasure in the study * of nature, and even recommending it to the attention of others by works which a private individual could never accomplish. We have then in the *Salictum Woburnense* a standard set of figures (amongst many exotic ones) of all the British species; which, together with those of *Engl. Botany*, do, it must be confessed, give to the British botanist an advantage over all that the continental authors have published on the subject, and to them I refer in every instance and with great satisfaction. The arrangement of the species in the "*Salictum*" is due to the botanical skill and knowledge of

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* His Grace was first led to devote his attention to plants by a severe attack of illness, which unfitted him for the more important duties of his station: and "if in this," he says in a former and almost equally beautiful book, the "*Hortus Ericæus Woburnensis,*" "I have been able to beguile even a single hour of irksomeness, during a protracted period of sickness and suffering, I am abundantly grateful to that Providence which in its universal dispensations, has permitted me to indulge in a pursuit at once so pleasing and so rational." *Introd.* p. iii.

Mr. Forbes, head gardener at Woburn, which his Grace has fully acknowledged: and that department has done him great credit.

The arrangement here adopted of the British species is suggested by my friend Mr. Borrer. It is a natural one, undoubtedly, and like all natural groupes, difficult to be defined in words.

* Monandræ. *Borr.* *Filament* 1, *with a double anther, or, in* S. rubra, *forked upwards and bearing two anthers. Trees of low stature, or shrubs, with twiggy branches and more or less lanceolate and serrated leaves often broader upwards. Catkins very compact.*—" The wild and willowed shores of Teviot," Mr. Borrer has found to afford some puzzling varieties of this groupe.

1. S. *purpúrea*, Linn. (*bitter purple Willow*); monandrous, decumbent, leaves lanceolate broadest upwards attenuated below serrated glabrous, germens ovate very pubescent sessile, stigma ovate nearly sessile. *Engl. Bot. t.* 1388. *Hook. Scot. i. p.* 277. *Engl. Fl. v. iv. p.* 187. *Salict. Wob. p.* 1. *t.* 1.

Meadows between Thorpe and Norwich. *Sm.* Eskdale, *Lightf.* Melrose, *Maughan. Fl.* March. ♄.—A small *shrub*, with purple trailing *branches. Leaves* glaucous, especially beneath. *Fertile catkins* singularly compact. This is, according to Sir Jas. E. Smith, a valuable osier for basket-work and for plaiting into low close fences, its *bark* being so intensely bitter that hares and rabbits will not touch it.

2. S. *Hélix*, Linn. (*Rose Willow*); monandrous, erect, leaves lanceolate broadest upwards attenuated below serrated glabrous, germens oblongo-ovate very pubescent sessile, style short, stigmas almost linear emarginate. *Engl. Bot. t.* 1343. *Hook. Scot. i. p.* 278. *Engl. Fl. v. iv. p.* 188. *Salict. Wob. p.* 3. *t.* 2.

Marshes and the banks of rivers. *Fl.* March, Apr. ♄.—In the herbarium, this can scarcely be distinguished from the preceding, except by its larger *catkins*, longer *germens* and *styles*, bifid *stigmas*, and yellow glossy *bark*. In a growing state, the plant is recognised by being upright and taller. The *fertile catkins* are represented much too broad in the *Engl. Bot.* figure, as Mr. Borrer observes. They are very accurate, according to my specimens, in the *Salictum Woburnense.*—The leaves and twigs, we are told, are less bitter than in the former, well adapted for basket-work (*Mr. Forbes*) and more ornamental in plantations.

3. S. *Lambertiána*, Sm. (*Boyton Willow*); monandrous, erect, leaves lanceolate broadest upwards serrated glabrous, germens shortly ovate very pubescent sessile, stigmas ovate emarginate. *Engl. Bot. t.* 1359. *Hook. Scot. i. p.* 278. *Engl. Fl. v. iv. p.* 190. *Salict. Wob. p.* 5. *t.* 3.

First discovered on the banks of the Willy at Boyton, Wilts, and at Staines, by *Aylmer Bourke Lambert, Esq.:* and since in other parts of England; as near Icklingham, Suffolk: near Norwich; and at Henley upon Thames. Near Edinburgh, *Mr. Maughan. Fl.* Apr. ♄.—Very nearly allied to the last, but distinguishable by its *leaves*, generally broader at the base, and the purplish glaucous hue of the young shoots.

4. S. *Woolgariána*, Borr. mss. (*Mr. Woolgar's Willow*); monandrous, erect, leaves cuneato-lanceolate serrated glabrous, germens ovate very pubescent sessile downy, stigmas nearly sessile ovate scarcely emarginate.—*S. monandra, Salict. Wob. p.* 7. *t.* 4. (*excl. the syn. of Hoffm. except that of t.* 1. *f.* 1.) *S. monandra, var. Hoffm. Hist. Sal. v. i. p.* 21. *t.* 1. *f.* 1.

About Lewes, Sussex, in Osier-holts, but scarcely wild; *Mr. Woolgar.* At Kingston-upon-Thames, apparently wild; *Mr. Borrer. Fl.* May. ♄.—Under *S. monandra* are included, by Hoffm., not only *S. purpurea* and *S. Helix*, but also, according to Mr. Borrer, our present individual, distinguishing it however as a *var.;* as such therefore it had been long known to Mr. Borrer and the late Mr. Woolgar, though the latter gentleman was so far of opinion that it was a distinct species, that he used to call it *S. cuneifolia*, from the shape of its *leaves*, especially the upper ones. The name *monandra* can now scarcely be retained without creating much needless confusion, and I gladly adopt that of Mr. Borrer, in compliment to a gentleman who supplied Sir J. E. Smith with several of his willows and who formed his opinion upon the species from long and accurate observations. The present one is alluded to in the *Engl. Fl.* under *S. Lambertiana*, with which it agrees in the *stigmas;* while the *catkins* are most like those of *S. Forbyana* and of a peculiarly soft texture. In the willow garden at Woburn Abbey, whither it was sent by Mr. Forster as *S. monandra*, and consequently published under that name in the "*Salictum*," it attained only to the height of 6 feet in five years. Mr. Forbes observes that its shoots and twigs much resemble those of *S. Helix*, while the leaves and stigmas are widely different.

5. S. *Forbyána*, Sm. (*fine Basket Osier*); monandrous, erect, leaves with small downy stipules lanceolato-oblong serrated glabrous, style equal in length to the linear divided stigmas. *Engl. Bot. t.* 1344. *Engl. Fl. v. iv. p.* 191. *Salict. Wob. p.* 9. *t.* 5.

Meadows and osier grounds at Fincham, Norfolk (*Rev. Jos. Forby*), and near Lynn. Cambridgeshire, truly wild. *Sm. Fl.* Apr. ♄.—*Stems* yellowish-green, glossy. Allied to *S. Helix*, especially in the fructification; but differing in the foliage. The species is much esteemed by basket-makers for the finer sorts of wicker-work.

6. S. *rúbra*, Huds. (*green-leaved Osier*); stamens 2, combined at the base, leaves linear-lanceolate broader in the fertile plant, acuminated serrated glabrous green on both sides, capsules oblongo-ovate very pubescent sessile, style elongated, stigmas linear undivided. *Engl. Bot. t.* 1145. *Hook. Scot. i. p.* 278. *Engl. Fl. v. iv. p.* 191. *Salict. Wob. p.* 11. *t.* 6.—*S. fissa, Hoffm.*

Low meadows and osier holts, but rare; Maidenhead, Windsor, near Salisbury, Cambridgeshire. Carlisle, *Mr. Winch.* Frequent in hedges and osier-grounds, Scotland, *D. Don.*—A small *tree*, with longer and more lanceolate and acuminated *leaves* than any other in the present group; in the latter particular coming near, as Sir J. E. Smith remarks to *S. viminalis,* but wanting its dense white pubescence. The *stamens* are always more or less combined below only into one filament, as in *S. Croweana,* which in other respects is quite a different plant.

** Triandræ. *Borr. Stamens* 3. *Leaves lanceolate, approaching to ovate, with evident deciduous stipules, serrated, glabrous. Catkins lax. Germens stalked, mostly glabrous.—Most of the species constitute excellent Osiers, and become trees if left to themselves.*

7. S. *unduláta,* Ehrh. (*sharp-leaved triandrous Willow*)*;* triandrous, leaves lanceolate acuminate serrated glabrous, germens stalked ovate-acuminate, style as long as the linear bifid stigmas, scales very villous. " *Ehrh. Beitr. v. vi. p.* 161. *Arb.* 108."—*S. lanceolata, Sm.—Engl. Bot. t.* 1436. *Hook. Scot. i. p.* 278. *Engl. Fl. v. iv. p.* 168. *Salict. Wob. p.* 27. *t.* 14.

Near Lewes in Sussex, (the fertile plant;) *Mr. Borrer,* who does not regard it as a native there. Angus-shire, *Mr. G. Don. Fl.* Apr. May. ♄.—A small *tree,* which casts its *bark* annually. It is cultivated and cut down every year for the use of basket-makers ; but Mr. Forbes observes that it is not so well calculated for the finer sorts of wicker-work as *S. triandra.* Dr. Meyer of Göttingen has sent me specimens of the *S. undulata* of *Ehrh.* compared with the Ehrhartian Herbarium, and Mr. Borrer is satisfied that they are identical with Smith's *lanceolata,* at least with the Sussex specimens communicated by Mr. Woolgar to him, and which are probably the same with the fertile individuals figured in *Engl. Bot.* Indeed that station is the only one mentioned by Sir J. E. Smith as English. Mr. Borrer has received German specimens of *S. undulata* with more or less silky germens, and these are probably the *S. undulata* of the *Salictum Woburnense,* which differs only in that respect, and in its more wavy leaves, from ours.

8. S. *triándra,* Linn. (*long-leaved triandrous Willow*)*;* triandrous, leaves oblongo-lanceolate acute serrated glabrous, germens stalked oblongo-ovate glabrous as well as the retuse scale, stigmas sessile retuse. *Engl. Bot. t.* 1435. *Hook. Scot. i. p.* 278. *Engl. Fl. v. iv. p.* 166. *Salict. Wob. p.* 29. *t.* 15.

Wet woods and Osier-grounds, frequent. *Fl.* May and Aug. *Sm.* ♄. —This becomes a tall *tree,* 20—30 feet high if left to itself, casting its *bark* in the autumn. It is abundantly cultivated in Osier-grounds and reckoned among the most valuable of the Osiers. Mr. Forbes speaks of another state of the plant, raised at Woburn, with larger and broader foliage ; to which probably the leaves in *Engl. Bot.* may be referred ; for they are much larger and broader than are described by the author. Mr. Woolgar used to distinguish this species by the dark-barked smooth shoots of the fertile plant. The sterile one he never met with at Lewes. Nearly allied to this is the *French Willow* of the Sussex Osier-grounds, which grows (according to Smith) from 12 to 15 feet high, with *leaves* of a fine bright green and large yellow *catkins,* with *stamens* thrice the length of the scales; the leaves only half the size of *triandra,* with more slender footstalks and larger stipules. This was the *S. contorta* of Mr.

Crowe's garden;* apparently the *Hoppeana* of *Willd*, (according to my specimens from Saltzburg,) differing only in the notched or retuse *bracteas*. Mr. Borrer seems to think that it is the *S. triandra* of *Curt. Fl. Lond.*

9. S. *Hoffmanniána*, Sm. (*short-leaved triandrous Willow*); triandrous, leaves shortly and broadly lanceolate acute slightly rounded at the base serrated glabrous, "germens stalked ovate compressed glabrous, stigmas nearly sessile." *Engl. Fl. v. iv. p.* 168. *Salict. Wob. p.* 31. *t.* 16. *Borr. in Engl. Bot. Suppl. t.* 2620.—*S. triandra*, *Hoffm. Sal. v. i. p.* 45. *t.* 9, 10. *t.* 23. f. (*excl. the vars.?*) *Borr.*

Sides of streams in Sussex (sterile plant,) *Mr. Borrer;* and near Cambridge, *Rev. J. Holmes. Fl.* May. ♄.—A much branched *shrub*, or crooked *tree;* scarcely exceeding 12 feet in height. *Bark* of the *stem* and large *branches* deciduous, as in the other triandrous Willows. The humbler growth, the short, flat, lanceolate *leaves* more rounded at their base, with larger, rounded, ear-shaped *stipules*, distinguish this plant from *S. triandra*, with which it is said to agree in the fertile *flowers*, as it does, in wanting the deep furrows of the young twigs, so remarkable in *S. amygdalina.*

10. S. *amygdalína*, Linn. (*Almond-leaved Willow*); triandrous, leaves oblongo-ovate acute rounded at the base serrated glabrous, germens much stalked ovate glabrous, stigmas sessile bifid, young branches furrowed. *Engl. Bot. t.* 1936. *Hook. Scot. i. p.* 279. *Engl. Fl. v. iv. p.* 169. *Salict. Wob. p.* 35. *t.* 18.

Banks of rivers and ditches; Norfolk, Suffolk, Cambridgeshire; Scotland, *Dr. Parsons. Fl.* Apr. May and Aug. ♄.—A *tree*, growing to the height of 20—30 feet in the woods at Woburn, with much furrowed, yellowish, young *branches.* The plant is considered inferior as an Osier to *S. triandra*, to which it approaches very nearly in botanical character. About Lewes, Mr. Borrer says both the fertile and barren plants are confined to the Osier-beds, as are *S. triandra* and S. "*triandra, undulata*" of Mertens.

*** Pentandræ. *Borr. Stamens more than* 3, *usually* 5. *Moderately sized trees, with ample, glossy, fragrant foliage, exuding a resin from the glandular serratures of the leaves. Stamens, in each catkin, so numerous and long as to render the flowers, which too are in perfection at the same time with the foliage, quite handsome, while the tree itself is the most ornamental of the whole genus. Germens glabrous.*

11. S. *pentándra*, Linn. (*sweet Bay-leaved Willow*); stamens 5, leaves elliptical lanceolate acuminated glanduloso-serrated glabrous with several glands at the base, germens lanceolate glabrous nearly sessile, style scarcely any, stigmas bifid. *Engl. Bot. t.* 1805.

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* According to Sir J. E. Smith: but Mr. E. Forster says that the *S. contorta* of Mr. Crowe is a willow called "*S. triandra, undulata,*" by Prof. Mertens.

Hook. Scot. i. p. 279. *Engl. Fl. v. iv. p.* 171. *Salict. Wob. p.* 67. *t.* 34.

Banks of rivers and watery places; most frequent in the north. *Fl.* May, June. ♄.—Eighteen to 20 feet high. Its large and copious, shining foliage almost gives this plant the appearance of an evergreen. *Sterile catkins* broad, fragrant, as well as the leaves. The tough flexible shoots, Mr. Forbes says, are good for basket-work.—Mr. Borrer doubts if the American *S. lucida*, (*Salict. Wob. t.* 32.) be different from this: and Mr. Forbes states that species to have been confounded in gardens with the following.

12. S. *Meyeriána*, Willd. Enum. (*Meyerian Willow*); stamens 3—6, leaves elliptical lanceolate acuminated glanduloso-serrated glabrous with few (2—4) glands at the base, germens lanceolate glabrous stalked.—*Salict. Wob. p.* 65. *t.* 33. (*sterile fl.*)—*S. tetrandra, Willd. and S. hexandra? Ehrh.* (*fide Prof. Mertens*).

Brough, Westmoreland, (the sterile plant,) *Mr. Borrer*, who thinks *Mr. Winch* had sent it to Mr. E. Forster from near Newcastle. *Fl.* Apr. (*Mr. Forbes.*). ♄.—I should fear this is too near *S. pentandra*, judging from the dried specimen. The fertile plant I have only seen from abroad. In the specimen from Prof. Mertens, the *capsules* are on long pedicels. The sterile plant is, I believe, alone known in a living state in this country.

**** Fragiles. *Borr. Stamens* 2, (*as in the following groupes*). *Trees of considerable size, with lanceolate, glabrous, serrated, stipulated leaves, and very lax catkins with elongated, more or less stalked, glabrous germens.*

13. S. *decípiens*, Hoffm. (*white Welsh or varnished Willow*); leaves lanceolate pointed serrated very glabrous, floral ones partly obovate and recurved, footstalks somewhat glandular, germens tapering stalked glabrous, style longer than the cloven stigmas, branches smooth highly polished. *Sm.*—*Engl. Bot. t.* 1937. *Hook. Scot. i. p.* 279. *Engl. Fl. v. iv. p.* 183. *Salict. Wob. p.* 57. *t.* 29.

Low meadows, moist hedges and osier-grounds, in several parts of England. (*Sm.*). Collington woods, Edinb. *Mr. Maughan. Fl.* May. ♄.—Of this I am only acquainted with the sterile plant; nor has Sir J. E. Smith, nor Mr. Forbes, figured any other. It is described as a lofty *tree;* when treated as an *Osier*, producing, for a few years, good rods for basket-work, but gradually becoming shorter, and not worth cultivating. Many botanists, it is observed in *Engl. Fl.*, have confounded this with *S. fragilis*, to which it is referred in *Fl. Brit.* Mr. Borrer observes that it is the *S. amerina* of Walker.

14. S. *frágilis*, Linn. (*crack Willow*); leaves ovato-lanceolate acute serrated glabrous, germens shortly pedicellate oblongo-ovate glabrous, style short, stigmas bifid, scales pubescent and much ciliated. *Engl. Bot. t.* 1807. *Hook. Scot. i. p.* 279. *Engl. Fl. v. iv. p.* 184. *Salict. Wob. p.* 53. *t.* 27. (*not of Woodville? and other medical writers?*)

Banks of rivers and in marshy grounds, frequent. *Fl.* Apr. May. ♄.—"A tall bushy-headed *tree*, whose branches are set on obliquely, somewhat crossing each other, not continued in a straight line, by which it may readily be distinguished in winter." *Sm.* These *branches* are fragile, especially in spring, and hence the wood is of little or no value. Whatever good qualities have been attributed to the present species, Sir J. E. Smith observes, belong to the following; which has often been mistaken for it.

15. S. *Russelliána*, Sm. (*Bedford Willow*); leaves lanceolate tapering at each extremity strongly serrated glabrous very pale beneath, germens stalked lanceolate acuminate glabrous, style as long as the bifid stigmas, scales narrow lanceolate slightly ciliated or pubescent. *Engl. Bot. t.* 1808. *Hook. Scot. i. p.* 279. *Engl. Fl. v. iv. p.* 186. *Salict. Wob. p.* 55. *t.* 28, *and frontispiece* (*the tree*).—*S. fragilis, Woodville? and other medical writers.*

Marshy woods, Osier grounds and in many places. *Fl.* Apr. May. ♄.—This extremely valuable *tree* was first brought into notice by His Grace the late Duke of Bedford, and thence most appropriately honoured by bearing his name. Of the size to which it reaches, some interesting details are given in the present Duke of Bedford's Introduction to the *Salictum Woburnense.* It was one of this species and the favourite tree of Dr. Johnson at Litchfield, which was very recently destroyed by a hurricane, after it had attained a height of 60 feet, and a girth of 13 feet. Another tree at Gordon Castle, Scotland, at the age of 61, was 57 feet high, and above 11 feet in its greatest circumference. Great as is the affinity, botanically speaking, between this plant and the preceding, its properties are wholly different. So important is it as a plantation tree, that Mr. Lowe in his Survey of the County of Notts, states that at 8 years growth, the poles yielded a net profit of 214*l.* per acre; and in 2 years longer, they would probably have produced 300*l.* per acre. The late George Biggin, Esq., of Cosgrove Priory, an able chemist, ascertained that the *bark* of this tree contains the tanning principle in a superior degree to that of the Oak: and it is supposed that the medical properties stated to belong to *S. fragilis*, are attributed to it by mistake and should be referred to the present.—The *leaves* are of a peculiarly handsome shape when in perfection, deeply serrated and much attenuated.

***** Albæ. *Borr. Trees of considerable elevation, having lanceolate serrated leaves, with long silky hairs beneath, especially in a young state, which give to the foliage a light or whitish hue. The serratures glandular. Catkins lax: germens glabrous.*

16. S. *álba*, Linn. (*common white Willow*); leaves elliptical-lanceolate regularly glanduloso-serrate acute silky beneath often so above, germens ovato-acuminate nearly sessile glabrous, stigmas nearly sessile short recurved bifid, scales short pubescent at the margin. *Engl. Bot. t.* 2430. *Hook. Scot. i. p.* 287. *Engl. Fl. v. iv. p.* 231. *Salict. Wob. p.* 271. *t.* 136.

β. Under-side of the leaves less silky, often quite glabrous. *S. cærulea*, (*blue Willow*). *Engl. Bot. t.* 2431. *Salict. Wob. p.* 273. *t.* 137.

River sides, moist woods, &c. *Fl.* May. ♄.—A well known *tree*, of considerable size and of which the *var. β.* is of such exceedingly rapid growth, that it is by many still deemed a distinct species; and Mr. Forbes observes that the new *leaves*, after the wood has been cut, are of a larger size, and as well as the twigs, of a darker hue than the real *S. alba*. They seem to be alike valuable for their *bark* and their timber, and are both amply deserving of cultivation.

17. S. *vitéllina*, Linn. (*yellow Willow or golden Osier*); leaves lanceolate with glandular serratures acuminate more or less silky beneath, often so above, germens lanceolate sessile glabrous, style short, stigmas bipartite, scales lanceolate. *Engl. Bot. t.* 2430. *Hook. Scot. i. p.* 284. *Engl. Fl. v. iv. p.* 182. *Salict. Wob. p.* 39. *t.* 20.

Hedges and Osier-grounds, in many places. *Fl.* May. ♄.—This is rendered striking by the bright yellow colour of its *branches*, and the *leaves* often partake of the same tint. With this exception, the plant, as Mr. Borrer observes, is "*extremely* nearly allied to *S. alba*." Haller, too, united them. It is used as an *Osier* in many places.

* 6. Griseæ. *Borr.*

18. S. *petioláris*, Sm. (*dark long-leaved Willow*); leaves lanceolate serrated when young grey with short silky hairs especially beneath, germens stalked ovato-lanceolate very silky, stigmas divided nearly sessile, scales villous scarcely longer than the pedicel. *Engl. Bot. t.* 1147. *Hook. Scot. i. p.* 280. *Engl. Fl. v. iv. p.* 181.

Scotland, *Mr. Dickson.* Angus-shire, *Mr. G. Don.* *Fl.* Apr. ♄.—A very distinct species, with dark *branches*, and dusky-coloured, greyish-green *leaves*, silky with short soft hairs; in a young state, even silvery beneath. The *catkins* are scarcely an inch long, rather lax; much less in my specimens and in the *fig.* in *Salict. Wob.* than in *E. Bot.*, and remarkable for the lengthened stalks of the *germens* and dense silky covering of the latter. I have never seen native specimens.

* 7. Rosmarinifoliæ. *Borr.* *Small, erect shrubs. Leaves linear-lanceolate, entire, or with extremely minute, glandular teeth. Catkins short, lax. Germens stalked, silky.*

19. S. *rosmarinifólia*, Linn. (*Rosemary-leaved Willow*); leaves linear-lanceolate quite entire or with a few very minute glandular teeth silky, the young ones especially, catkins shortly oblong curved lax, germens stalked silky lanceolato-acuminate, style about as long as the linear divided stigmas, scales short villous. *Engl. Bot. t.* 1365. *Engl. Fl. v. iv. p.* 214. *Salict. Wob. p.* 173. *t.* 87.

Found by *Sherard.* Sent by Mr. Dickson to Mr. Crowe. (*Sm.*) *Fl.* Apr. ♄.—A slender, upright *shrub*, 2—3 feet high, with silky *leaves*, almost glabrous in the adult plant. Whole plant, when dry, turning almost black, as does the following.

20. S. *angustifólia*, Wulf.? (*little Tree Willow*); leaves linear-lanceolate nearly glabrous with minute glandular teeth, the young

quently was induced to unite the two former; and I think, judging from specimens communicated, by my friend, of the latter, that he will not think me very wrong for combining the three. They are altogether most *ambiguous* plants; and put on very different appearances in different stages of their growth. My *var. β.* is the most peculiar in appearance, and I have never seen any specimens but those gathered by Mr. Drummond near Forfar.

* 10. Reticulatæ. *Borr.*

H. 24. S. *reticuláta*, Linn. (*reticulated Willow*); leaves nearly elliptical-orbicular mostly glabrous remarkably reticulated with veins and glaucous beneath, germens sessile oblongo-ovate downy, style short, stigmas bifid. *Engl. Bot. t.* 1908. *Hook. Scot. i. p.* 283. *Engl. Fl. v. iv. p.* 200. *Salict. Wob. p.* 133. *t.* 67.

Lofty mountains of the north of England, Wales, and especially Scotland. *Fl.* June, July. ♄.—*Stem* short, very woody, much branched, procumbent: when cultivated, forming a beautiful tuft of considerable extent, with its curiously reticulated and large handsome *leaves*. The *catkins* and *stems* have a reddish or purplish tinge. I possess this from Arctic America with long silky hairs on both sides of the *leaves:* the young foliage indeed is often floccose.

* 11. Glaucæ. *Borr.* *Small, erect, very closely allied shrubs; remarkable for their soft hairy and silky oblongo-lanceolate leaves, often white and cottony beneath. Germens sessile, very downy or silky.*

25. S. *glauca*, Linn. (*glaucous Mountain Willow*); leaves ovato-lanceolate entire downy snow-white and very cottony beneath, germen sessile narrow-elliptical ovate very downy, stigmas nearly sessile bifid. *Engl. Bot. t.* 1810. *Hook. Scot. i. p.* 283. *Engl. Fl. v. iv. p.* 201. *Salict. Wob. p.* 135. *t.* 68.

Highlands of Scotland, *Mr. Dickson.* Clova mountains, *Mr. G. & D. Don.* *Fl.* July. ♄.—Nearly allied to the following; but differing in the *germen*, which is shorter, more obtuse and with nearly sessile *stigmas.*

26. S. *arenária*, Linn. (*downy Mountain Willow*); leaves oblongo-lanceolate entire downy especially beneath, germens sessile lanceolate thickly downy with a very long style, stigmas linear often entire, scales very silky. *Engl. Bot. t.* 1809. *Hook. Scot. i. p.* 283. (*excl. the syn. S. Stuartiana*). *Engl. Fl. v. iv. p.* 204. *Salict. Wob. p.* 169. *t.* 70.—*S. limosa, Wahl. Lapp. p.* 265. *t.* 16. *f.* 4.

Highland mountains, especially those of Breadalbane and Clova. *Fl.* June. ♄.—One foot to two feet high, with dark-brown, glossy *bark. Leaves* clothed with silky down, slightly so above, more so beneath where they are almost white. *Germen* with a remarkably long, slender, dark-coloured *style. Scales* almost black, very villous with long silky hairs.

27. S. *Stuartiána*, Sm. (*small-leaved shaggy Willow*); "leaves

nearly entire ovato-lanceolate acute shaggy above densely silky somewhat cottony beneath, style as long as the almost sessile woolly germen, stigmas capillary deeply divided the length of the style." *Engl. Bot. t.* 2586. *Hook. Scot. i. p.* 283. (*under S. arenaria*). *Engl. Fl. v. iv. p.* 203. *Salict. Wob. p.* 143. *t.* 72.—*S. lapponum, Walker.*

Breadalbane mountains, *Rev. Dr. Stuart.* Near the upper end of the burn of Finlarig, *Mr. Borrer.* Ben Lawers, *Mr. Turner. Fl.* July. Aug. ♄.—I regret that so often as I have visited the Breadalbane mountains, I have not been able to distinguish the *S. Stuartiana* from the preceding. Mr. Borrer says, "the leaves are sharp at each end, grey with hairs above, even when full grown." So are many of my acknowledged specimens of *S. arenaria.* It was named in compliment to one of the best men and most learned scholars that Scotland has produced, the late Rev. Dr. Stuart of Luss.

* 12. Viminales. *Borr. Trees of a more or less considerable size, with long pliant branches and lanceolate leaves. Germens nearly sessile, hairy or silky; their styles elongated, their stigmas linear, mostly entire.*

28. S. *viminális*, Linn. (*common Osier*); leaves linear-lanceolate obscurely crenate white and silky beneath, stipules very small sub-lanceolate, branches straight and twiggy, germens upon very short stalks lanceolato-subulate, style elongated, stigmas long linear mostly entire. *Engl. Bot. t.* 1898. *Hook. Scot. i. p.* 287. *Engl. Fl. v. iv. p.* 228. *Salict. Wob. p.* 265. *t.* 133.

Wet places, osier-grounds, &c. frequent. *Fl.* Apr. May. ♄.—This is held in great esteem for basket-work.

29. S. *stipuláris,* Sm. (*auricled Osier*); leaves lanceolate very indistinctly crenate white and downy beneath, stipules large semi-cordate acute often with a tooth or lobe at the base, germens stalked lanceolate very downy, style elongated, stigmas linear undivided, scales very shaggy. *Engl. Bot. t.* 1214. *Hook. Scot. i. p.* 286. *Engl. Fl. v. iv. p.* 230. *Salict. Wob. p.* 263. *t.* 132.

Osier-holts, hedges and woods, near Bury St. Edmunds, *Mr. Crowe. Fl.* March. ♄.—Allied to the preceding in *fructification:* differing in its larger and coarser *leaves,* less white beneath, and with large, very remarkable *stipules.*

30. S. *Smithiána*, Willd. (*silky-leaved Osier*); leaves lanceolate obscurely crenate white and covered with satiny pubescence beneath, stipules very small semicordate acute, germens lanceolato-subulate very silky shortly stalked, style elongated, stigmas long linear mostly entire. *Engl. Fl. v. iv. p.* 229. *Salict. Wob. p.* 367. *t.* 234.—*S. mollissima, Engl. Bot. t.* 1509. (*not Ehrh.*). *Hook. Scot. i. p.* 287.

Meadows and osier-grounds, England and Scotland, (*Mr. D. Don*). About Bury, *Mr. Crowe.* Glamorganshire, *Mr. Turner.* Near Warrington, *Mr. W. Wilson. Fl.* Apr. May. ♄.

31. S. *ferrugínea*, And. mss. (*ferruginous Willow*); leaves obovato-lanceolate very acute attenuated below slightly downy above, silky and greyish beneath rather obscurely serrated, stipules very minute, catkins stalked, germens ovato-subulate stalked silky, style about as long as the linear entire stigmas. *Forbes in Salict. Wob. p.* 255. *t.* 128.

First found by the late *Mr. G. Anderson*. Nuthurst, Sussex; *Mr. Borrer*, to whom I am indebted for specimens, and who observes that it comes nearest to *S. Smithiana*. *Fl.* Apr. May. ♄.—It forms a bushy shrub, 12—14 feet high, according to Mr. Forbes.

32. S. *acumináta*, Sm. (*long-leaved Willow*); "leaves lanceolato-oblong pointed wavy finely toothed glaucous and downy beneath, stipules half-ovate then kidney-shaped, catkins cylindrical, germen stalked ovate hairy, style as long as the undivided stigmas." *Sm.—Engl. Bot. t.* 227. *Hook. Scot. i. p.* 286. *Engl. Fl. v. iv. p.* 227. *Salict. Wob. p.* 261. *t.* 131.

Rather moist woods and hedges, frequent. (*Sm.*) *Fl.* Apr. ♄.—In my specimens, the *germens* and *scales* of the *catkins* are remarkably shaggy. Mr. Borrer, who observes that this is the *S. lanceolata* of Seringe, has never gathered this species *wild*, nor has Mr. Forbes; who, as well as Sir J. E. Smith, places it among the true *Sallows*, our "*Cinereæ* tribe."

33. S. *holoserícea*, Willd. (*soft shaggy-flowered Willow*); leaves lanceolate acuminate serrated glabrous above, pale downy and strongly veined beneath, catkins cylindrical, germens stalked densely clothed with silky wool, stigmas ovate sessile, scales (black) very shaggy. *Willd. Sp. Pl. v. iv. p.* 708. *Bluff et Fing. Fl. Germ. v. ii. p.* 565.

About Lewes, Sussex; *Mr. Borrer*. *Fl.* Apr. May. ♄.—This is a plant which Mr. Borrer received from Sir J. E. Smith, marked *S. acuminata, var. rugosa;* but which he considers to be the *S. holosericea* of Willd., probably the *S. grandifolia* of Seringe, and distinguishes it from the true *acuminata*, by its sessile pale-coloured *stigmas* and *leaves* greener and more rugose above and more strongly veined beneath. Mr. Forster says that Mr. Crowe regarded it as a *var.* of *S. Smithiana*, or as an undescribed species.

* 13. Cinereæ. *Borr. Trees or low shrubs, with downy branches and mostly obovate, grey, hoary, toothed, more or less wrinkled and stipuled leaves, very veiny beneath. Germens sericeo-tomentose.—This group is usually denominated the Sallows.*

34. S. *cinérea*, Linn. (*grey Sallow*); leaves obovato-elliptical sometimes approaching to lanceolate more or less glaucous above, beneath pubescent and reticulated with veins the margins slightly recurved, stipules semicordate, germens stalked lanceolato-subulate silky, style short, stigmas mostly entire. *Engl. Bot. t.* 1897. *Hook. Scot. i. p.* 284. *Engl. Fl. v. iv. p.* 215. *Salict. Wob. p.* 249. *t.* 125.

Banks of rivers and in moist woods, abundant. *Fl.* Apr. ♄.—A *tree* 20—30 feet high, of no beauty and little use.

35. S. *aquática*, Sm. (*Water Sallow*); stem and branches erect, leaves slightly serrated obovato-elliptical minutely downy flat rather glaucous beneath, stipules rounded toothed, germens silky stalked, stigmas nearly sessile. *Engl. Bot. t.* 1437. *Hook. Scot. i. p.* 284, (*with S. cinerea*). *Engl. Fl. v. iv. p.* 218. *Salict. Wob. p.* 253. *t.* 127.

Wet hedge-rows, swampy places, &c. *Fl.* Apr. ♄.

36. S. *oleifólia*, Sm. (*olive-leaved Sallow*); "stem erect, branches straight spreading, leaves obovato-lanceolate flat rather rigid minutely toothed acute glaucous reticulated and finely hairy beneath, stipules small notched rounded, catkins oval nearly half as broad as long." *Sm.*—*Engl. Bot. t.* 1402. *Hook. Scot. i. p.* 284, (*with S. cinerea*). *Engl. Fl. v. iv. p.* 219. *Salict. Wob. p.* 251. *t.* 126.

Abundant in Norfolk: about Tonbridge, as well as in other parts of England, and in Scotland. *Fl.* March. ♄.—Mr. Forbes is disposed, with Sir Jas. E. Smith, to consider this and the two preceding species really distinct. Mr. Borrer says, "I do not venture to unite the three, although I could never satisfy myself as to their characters. They all vary much in foliage and in fructification."

37. S. *auríta*, Linn. (*round-eared Sallow*); leaves obovate repando-dentate wrinkled with veins more or less pubescent very downy beneath, tipped with a small bent point recurved at the margins, stipules roundish semicordate, germens lanceolato-subulate stalked silky, style very short, stigmas generally entire. *Engl. Bot. t.* 1487. *Hook. Scot. i. p.* 285. *Engl. Fl. v. iv. p.* 216. *Salict. Wob. p.* 247. *t.* 124.

Moist woods and thickets, abundant. *Fl.* May. ♄.—A small, bushy *tree*, with straggling *branches*. "One of the least equivocal species; although its *leaves* vary in length and in roundness. They are usually much wrinkled and vaulted, the *stipules* large and stalked." *Borrer. MSS.*

38. S. *capréa*, Linn. (*great round-leaved Sallow*); leaves ovato-elliptical acute serrated and waved at the margin downy beneath stipules semicordate, germens pedicellate lanceolato-subulate silky stigmas sessile undivided. *Engl. Bot. t.* 1488. *Hook. Scot. i. p.* 286. *Engl. Fl. v. iv. p.* 225. *Salict. Wob. p.* 243. *t.* 122.

Woods and dry pastures, common. *Fl.* Apr. May. ♄.—A small *tree*, which distinguishes itself, in the spring, by being loaded with handsome yellow *blossoms* before any of its *leaves* appear. The *catkins*, of both kinds, are broader and shorter than in most of the species with crowded *flowers*. The Highlanders employ the *bark* to tan leather, and the handles of various agricultural implements are made of the *wood*. The bark has even been used and with success, instead of that from Peru.

39. S. *sphaceláta*, Sm. (*withered-pointed Sallow*); "stem erect, leaves elliptico-obovate even veiny entire or slightly serrated

downy on both sides discoloured at the point, stipules half heart-shaped toothed erect, germens stalked ovato-lanceolate silky, stigmas notched longer than the style." *Sm.—Engl. Bot. t.* 2333. *Hook. Scot. i. p.* 286. *Engl. Fl. v. iv. p.* 224. *Salict. Wob. p.* 241. *t.* 221.

At Finlarig, near the head of Loch Tay, *Rev. Dr. Stuart. Fl.* April, May. ♄.—With this I am unacquainted: and Mr. Borrer doubts if it be a good species.

* 13. Nigricantes. *Borr. A group as difficult to define as are the species which compose it. Many approach the last division very nearly, having more or less ovate or obovate leaves, but they are less wrinkled, and, when dry, generally become black, whatever care may be taken in the preservation of them. Shrubs with long branches, or small trees. Germens glabrous or silky, stalked. Style more or less bifid.*

40. S. *cótinifolia*, Sm. (*Quince-leaved Sallow*); leaves elliptical-orbicular obsoletely toothed slightly downy above more so glaucous and veiny beneath, germens stalked lanceolato-acuminate, style bifid, stigmas roundish notched. *Engl. Bot. t.* 1403. *Hook. Scot. i. p.* 286. *Engl. Fl. v. iv. p.* 220. *Salict. Wob. p.* 227. *t.* 114.

Scotland, near Glenluce and near Forfar: and in Norfolk. *Fl.* Apr. May. ♄.—A low *shrub*, with *leaves* two or more inches long, shaped almost like those of the garden *Rhus Cotinus*. In my plant the *styles* are distinctly and deeply bifid, each segment bearing a short, emarginate *stigma*.

41. S. *hírta*, Sm. (*hairy-branched Sallow*); "stem erect, branches densely hairy, leaves elliptic heart-shaped pointed finely crenate downy on both sides, stipules half-heart-shaped flat toothed nearly glabrous." *Sm.—Engl. Bot. t.* 1404. *Engl. Fl. v. iv. p.* 221. *Salict. Wob. p.* 225. *t.* 113.

Norfolk, *Mr. Crowe*. Castle Eden, Yorkshire, *Mr. W. Backhouse*. *Fl.* Apr. May. ♄.—A small *tree*, in many respects approaching the preceding: the *leaves*, however, in my specimens, are less broad at the base than the preceding, or, as Mr. Forbes justly observes, less heart-shaped. The *fertile catkin* was unknown to Sir J. E. Smith, as it was to the author of the "*Salictum*," till after the plate was engraved. But I have a fertile branch from Mr. Borrer, as well as from Mr. Backhouse; in which, as in the preceding, the *style* is bifid, though only for a very short way, bearing capitate emarginate *stigmas*.

42. S. *nígricans*, Sm. (*dark-leaved Willow*); "leaves elliptic-lanceolate acute crenate glabrous with a downy rib above glaucous beneath, stamens 2, thrice the length of the hairy scales, germens lanceolate downy on a short downy stalk." *Sm.—Engl. Bot. t.* 1213. *Engl. Fl. v. iv. p.* 172. *Salict. Wob. p.* 73. *t.* 37.—*S. phylicifolia*, *β. Linn.* (*Sm.*)

Fens, osier-grounds, woods and thickets. Wrongay fen, Norfolk, and near Shobden Court, Herefordshire. (*Sm.*) *Fl.* Apr. ♄.—A large *shrub*, of which it does not appear that the *fertile catkins* have been found in Britain.

43. S. *Andersoniána*, Sm. (*green Mountain Sallow*); leaves elliptical-oblong acute faintly crenato-dentate the upper ones chiefly subpubescent all glaucous beneath, stipules small subovate, branches minutely downy, germens stalked linear-subulate glabrous, style elongated bifid at the extremity, stigmas bifid, scales fringed with a few long silky hairs. *Engl. Bot. t.* 2343. *Hook. Scot. i. p.* 285. *Engl. Fl. v. iv. p.* 223. *Salict. Wob. p.* 217. *t.* 109.

Sides of streams, among the Breadalbane mountains. Banks of the Tyne, below Newcastle; *Mr. Winch. Fl.* May, June. ♄. *

44. S. *Forsteriána*, Sm. (*glaucous Mountain Sallow*); " stem erect, branches minutely downy, leaves elliptic-obovate acute crenate slightly downy glaucous beneath, stipules vaulted, catkins elongated (*Borr.*), germens stalked awl-shaped silky, style (at length bifid at the extremity) as long as the blunt emarginate (or bifid) stigmas." *Sm.—Engl. Bot. t.* 2344. *Hook. Scot. i. p.* 285. *Engl. Fl. v. iv. p.* 224. *Salict. Wob. p.* 219. *t.* 110.

Not rare in Scotland, *Mr. E. Forster:* on the Breadalbane mountains, along with the preceding. Heaton Dene, banks of the Tyne; *Mr. Winch. Fl.* May, June. ♄.—Similar to the last: distinguishable by its more or less silky *germens*, and, as Mr. Borrer observes, longer *catkins;* to which Mr. Forster adds the crowded *germens* and the greater dissimilarity of colour of the two sides of the leaf.

45. S. *rupéstris*, Donn, (*silky Rock Sallow*); " stem trailing, leaves obovate acute serrated flat even silky on both sides, stipules hairy, branches minutely downy, germens stalked awl-shaped silky, style as long as the blunt undivided stigmas." *Sm.—Engl. Bot. t.* 2342. *Hook. Scot. i. p.* 285. *Engl. Fl. v. iv. p.* 222. *Salict. Wob. p.* 221. *t.* 111.

Rocks of Craig-challeach and Mael Ghyrdy, Scotland; near Blanchland, Northumberland; *Mr. Winch. Fl.* May. ♄.—I do not myself understand this species, I must confess; notwithstanding that Mr. Borrer has kindly assisted me with specimens. Indeed he himself says " the *germen* is silky or naked, unless I unite different things." Mr. Forbes observes that it is very distinct from the two preceding and that its *branches* are tough and useful for tying, &c.

46. S. *petræa*, And. mss. (*Rock Sallow*); " leaves elliptic-oblong serrated wrinkled and minutely hairy on their upper surface glaucous reticulated with prominent veins and slightly hairy beneath, stipules half-heart-shaped serrated, catkins about half an inch (or an inch) long, germens nearly sessile ovate glabrous (sometimes partially silky), style divided as long as the parted stigmas." *Forbes in Salict. Wob. p.* 193. *t.* 97.

Cultivated by Mr. Forster, the Duke of Bedford, and Mr. Borrer, from plants gathered in Britain by the late *Mr. G. Anderson*, who gave

* S. Damascena. Appen. 26.

to the species the name of *S. petræa*. *Fl.* Apr. May. ♄.—My specimens have the *germens* lanceolate, acuminate, partially silky or glabrous. A *shrub*, 6—7 feet high, according to Mr. Forbes.

✳

* 5. Bicolores. *Borr.* *Leaves glabrous, or nearly so, dark green above, very glaucous beneath, between obovate and lanceolate. Germens very silky.—Twiggy bushes.*

2 ✳ 47. S. *laurína*, Sm. in Linn. Tr. (*shining dark-green Willow*); leaves elliptic-oblong acute waved and slightly serrated, nearly glabrous glaucous beneath, footstalks dilated at the base, stipules pointed serrated, scales obtuse hairy, half as long as the densely downy ovate long-stalked germens." *Sm.—S. bicolor, Engl. Bot. t.* 1806. *Hook. Scot. i. p.* 280. *Engl. Fl. v. iv. p.* 178. *Salict. Wob. p.* 75. *t.* 38.

Woods and thickets, in various parts of Britain. *Sm. Fl.* Apr. May. ♄.—This Mr. Borrer considers a very distinct species.

3 ✳ 48. S. *radícans*, Sm. (*Tea-leaved Willow*); leaves obovato- or elliptic-lanceolate with often wavy serratures glabrous glaucous beneath, germens lanceolate stalked very silky as well as the scales, style elongated, stigmas entire or bifid. *Hook. Scot. p.* 1053.—*S. phylicifolia, Linn.? (not Hook. Scot.) Engl. Bot. t.* 1958. *Engl. Fl. v. iv. p.* 173. *Salict. Wob. p.* 91. *t.* 46.

Among the Breadalbane mountains of Scotland; first found by the late *Rev. Dr. Stuart. Fl.* May. ♄.—"As Linnæus, no doubt, included several other Willows under his *S. phylicifolia*, it would be better to call this by Smith's first name, *radicans*." *Borrer.*

49. S. *Borreriána*, Sm. (*Borrerian Willow*); leaves broadly lanceolate with shallow nearly even serratures very glabrous glaucous beneath, stipules lanceolate small, branches erect, catkin lax, germens lanceolato-subulate on long stalks quite glabrous, style long bifid, stigmas linear bifid, scales of the catkins acute shaggy. *Engl. Fl. v. iv. p.* 174. *Borr. in Engl. Bot. Suppl. t.* 2619. *Salict. Wob. p.* 89. *t.* 45.—*S. phylicifolia, Hook. Scot. i. p.* 281. *Wahl. Lapp. p.* 270. *t.* 17. *f.* 2?

Highland mountain-vallies; Glen Nevis and Breadalbane: first discovered by *Mr. Borrer. Fl.* April, before the leaves appear, and again in the willow garden of Woburn, in July, when the plant is in full leaf. ♄.—Allied to the preceding, but distinguished by the accurate Mr. Borrer, even while its *fertile catkins* were unknown to him; these, which Mr. W. Wilson and myself have found at Killin, still further strengthen the character of the species.

50. S. *Daválliana*, Sm. (*Davallian Willow*); "leaves obovato-lanceolate finely serrated or minutely toothed tapering at each end glabrous rather glaucous beneath, footstalks, midrib and young branches somewhat downy, catkins with small rounded scales, capsules lanceolate glabrous or somewhat silky." *Sm. Engl. Fl. v. iv.*

✳ S. propinqua. App. 27.
2✳ S. tenuior. App. 28.
3✳ S. laxiflora. App. 29.

p. 175. *Salict. Wob. p.* 93. *t.* 47.—*S. phylicifolia, Willd.* (?) *omitting the syn.* (*Sm*).

Brought from Scotland and cultivated by *Mr. G. Anderson. Fl.* May. ♄.—Mr. Borrer's specimen, which he believes to be the same as the *Engl. Fl.* plant, and which he received from the late Mr. Anderson (under the name of *S. tetrapla*, Walk.) have the germens *very* silky. The same plant Mr. Borrer sent to Sir J. E. Smith as "*tetrapla*, Walk.," and also as being named (erroneously Mr. Borrer believes) "*S. phylicifolia*" of Willd.

51. S. *tétrapla*, Walk. (*four-ranked Willow*); "leaves elliptic-oblong pointed unequally serrated nearly glabrous glaucous with prominent veins beneath, stipules half arrow-shaped, scales mostly shorter than the hairy stalks of the ovato-oblong glabrous germens, style as long as the stigmas." *Sm.*—"*Walk. Ess.* 468. *according to Mr. Anderson.*" *Engl. Fl. v. iv. p.* 177.

Gathered in Breadalbane by *Mr. Borrer.* (*Sm.*) *Fl.* May. ♄.

52. S. *Weigeliána*, Willd. (*Weigelian Willow*); leaves obovate or elliptical somewhat pointed finely serrated glabrous glaucous beneath, catkins dense with hairy scales longer than the stalks of the awl-shaped germens, style longer than the stigmas. (*Sm.*)

α. germens glabrous except toward the point. *S. Wulfeniana, Engl. Fl. v. iv. p.* 176. *Salict. Wob. p.* 95. *t.* 48. (*not of Willd.*)

β. germens silky throughout. *S. Weigeliana, Willd.* (*Borrer.*) *Salict. Wob. p.* 101. *t.* 51.

α. Highlands of Scotland and at Kirkby Lonsdale; *Mr. Borrer.*

β. in Teesdale, *Mr. Borrer. Fl.* Apr. May. ♄.—Mr. Borrer suspects that the fertile *S. Croweana* of *Engl. Fl.* belongs to this species.

53. S. *tenuifólia*, Sm. Fl. Br. (*thin-leaved Willow*); "leaves elliptical acute serrated nearly glabrous glaucous beneath, stipules small or none, scales hairy, capsule ovate glabrous on a short smooth stalk. *Sm.*—*Fl. Br. p.* 1052. (*not Engl. Bot. according to Mr. Borrer, which is S. bicolor of Ehrh. not Sm.*) *Engl. Fl. v. iv. p.* 179. *Salict. Wob. p.* 99. *t.* 50. (*the true plant.*)

Above the bridge at Kirkby Lonsdale, 1783; *Sir J. E. Smith. Fl.* May, June. ♄.—Of this Mr. Borrer observes, that the best authenticated specimens he has seen, scarcely differ from the preceding; but in having the *germen* and its stalk perfectly glabrous.

54. S. *nítens*, And. mss. (*shining-leaved Willow*); "leaves elliptical acute unequally serrated very glabrous and glaucous beneath, minutely downy with a downy midrib above, stipules obsolete, branches spreading, catkins nearly sessile with acute shaggy scales." *Engl. Fl. v. iv. p.* 175. *Salict. Wob. p.* 87. *t.* 44.

Found in Scotland by *Mr. G. Anderson. Fl.* Apr. ♄.—A bushy *shrub*, 10—12 feet high. The *fertile catkins* have not been described.

55. S. *Croweána*, Sm. (*Crowean Willow*); stamens combined below, leaves elliptical slightly serrated quite glabrous glaucous

beneath. *Engl. Bot. t.* 1146. *Hook. Scot. i. p.* 278. *Engl. Fl. v. iv. p.* 192. *Salict. Wob. p.* 103. *t.* 52.

Swampy meadows and thickets. Norfolk, *Mr. Crowe.* North of England, *Mr. Winch. Fl.* Apr. May. ♄.—Mr. Borrer presumes that the connate filaments are but an accidental monstrosity, in that individual from which all the plants, that he has examined, have originated: and Mr. Forbes describes and figures in the "*Salictum,*" a still more remarkable structure: "the barren *catkins* changing into *germens*, with the *style* and *stigma* perfect, as in the *fertile floret.*" He has watched the progressive change and observed that the monadelphous filaments appeared a little thicker in the middle, where they were united and gradually became pistils.—A similar alteration has been remarked by Mr. Borrer in *S. oleifolia*, and by Mr. R. Gee in those of *S. cinerea.* See *Engl. Fl. v. iv. p.* 220, and 216. Sir James E. Smith describes the germens of *S. Croweana* as downy; Mr. Borrer finds them to be nearly glabrous, as they are figured in *Salict. Wob.*

56. S. *bícolor*, Ehrh. (*two-coloured Willow*); leaves elliptical green and shining above, glabrous and glaucous beneath, serrated with oblique points, stipules crescent-shaped serrated, barren catkins copious bright yellow, filaments slightly bearded at the base. *Forbes.—S. tenuifolia, Engl. Bot. t.* 2186. (*as to figure, not Fl. Br.*) *Hook. Scot. i. p.* 282.—*S. floribunda, Forbes in Salict. Wob. p.* 107. *t.* 54.

Highlands of Scotland; in Glen Lyon, 1810; *Mr. Borrer.* Banks of the Ettrick, *Mr. G. Anderson. Fl.* Apr. and again in July. (*Forbes*). ♄.—I believe the sterile plant alone of this, is certainly known. In what Mr. Borrer considers to be its fertile state, the adult *leaves*, he says, are mostly quite without hairs, whilst those of the sterile plant are rather plentifully but inconspicuously sprinkled, especially on the under side: as *Mr. Forbes* indeed observes in the description of the young leaves of his *floribunda*, a plant received by him from Mr. E. Forster, as the *S. tenuifolia, Engl. Bot.*

* 57. S. *Dicksoniána*, (*broad-leaved Mountain Willow*); "leaves elliptical acute slightly toothed glabrous glaucous beneath, young branches very glabrous, catkins ovate short erect, germens stalked ovate silky, stigmas nearly sessile." *Engl. Bot. t.* 1390. *Hook. Scot. i. p.* 282. *Engl. Fl. v. iv. p.* 196. *Salict. Wob. p.* 109. *t.* 55. *f.* 2.

Scotland, *Mr. Dickson. Fl.* Apr. ♄.—I remarked, in *Fl. Scot.*, that my specimens of this plant from Mr. Borrer, did not accord with the *Engl. Bot.* figure, but closely resembled *S. radicans.* The same individuals have been reviewed by Mr. Borrer and returned without any observation; from which I infer that they are what he still considers the true *Dicksoniana.* Now these accord precisely with the *S. Dicksoniana* which the Duke of Bedford received from various collections as such: and the discrepancy between it and the *Engl. Bot.* figure did not escape the notice of Mr. Forbes, who has in addition to the Woburn plant, represented a catkin and pistil from *Engl. Bot.* I can therefore only repeat what I have said in *Fl. Scot.*, that if *S. Dicksoniana* be a good species, I am quite unacquainted with it.

* S. phillyreifolia. App. 30.

* 16. Vacciniifoliæ. *Borr. Small, procumbent or rarely erect shrubs, with leaves bearing a considerable resemblance to those of a* Vaccinium, *opaque, glaucous beneath. Germens downy, sessile.*

58. S. *vaccíniifolia,* Walk. Ess. (*Bilberry-leaved Willow*); leaves lanceolato-ovate serrated glabrous and even above, glaucous and silky beneath, capsules ovate silky, stems decumbent. *Sm.—Engl. Bot. t.* 2341. *Engl. Fl. v. iv. p.* 194. *Salict. Wob. p.* 113. *t.* 57.—*S. prunifolia, β. Hook. Scot. i. p.* 282.—*S. livida, Hook. Scot. i. p.* 281. *Engl. Fl. v. iv. p.* 199.

Highland mountains, not unfrequent. *Sm.* First found at the head of Annandale and described by the late *Dr. Walker.* Hart-fell, near Moffat, *Mr. Maughan. Fl.* Apr. (*Sm. Forbes*)—June in the Highlands. ♄.—A humble and pretty little *shrub,* which I had referred to a variety of *S. prunifolia.* This and all the 3 following are very closely allied.

59. S. *carináta,* Sm. (*folded-leaved Willow*); leaves ovate serrated glabrous glaucous beneath and frequently folded so as to form a keel, germens sessile oblongo-ovate extremely silky, style short, stigmas emarginate. *Engl. Bot. t.* 1363. *Hook. Scot. i. p.* 282. *Engl. Fl. v. iv. p.* 197. *Saliet. Wob. p.* 117. *t.* 59.

Highlands of Scotland. *Fl.* Apr.—June. ♄.—Two feet high. Taller and stouter than the last, with more upright *branches* and longer and often keeled *leaves.*

60. S. *prunifólia,* Sm. (*Plum-leaved Willow*); leaves ovate serrated more or less veiny glabrous glaucous beneath, germens sessile oblongo-ovate extremely silky, style short, stigmas emarginate. *Engl. Bot. t.* 1361. *Hook. Scot. i. p.* 282.—*Engl. Fl. v. iv. p.* 193. *Salict. Wob. p.* 111. *t.* 57.—*S. myrsinites, Lightf.* (*not Linn.*)

Highland mountains of Scotland, frequent. *Fl.* Apr.—June. ♄.

61. S. *venulósa,* Sm. (*veiny-leaved Willow*); "leaves ovate serrated naked reticulated with prominent veins above rather glaucous beneath, capsules ovate silky, stem erect much branched." *Sm.—Engl. Bot. t.* 1362. *Hook. Scot. i. p.* 282. (*with S. prunifolia*). *Engl. Fl. v. iv. p.* 195. *Salict. Wob. p.* 115. *t.* 58.

Highlands of Scotland, *Mr. Dickson. Fl.* Apr.—June. ♄.—Mr. E. Forster, as well as myself, thinks this only a *var.* of *S. prunifolia.* The last four species, if such they may be called, I have gathered on the Breadalbane mountains, for a succession of years, with their blossoms in perfection in the month of June. In gardens, they flower in April.

** 17. Myrsinites. *Borr. Small, bushy plants; with glossy, rigid, small, oval or broadly elliptical, serrated leaves, and downy germens.*

62. S. *myrsinítes,* Linn. (*green Whortle-leaved Willow*); leaves elliptical waved serrated shining often hairy with prominent veins, catkins short lax, germens sessile lanceolate loosely silky, style half

their length, and as well as the linear stigmas bifid. *Engl. Bot. t.* 1360. *Hook. Scot. i. p.* 282. *Engl. Fl. v. iv. p.* 195. *Salict. Wob. p.* 119. *t.* 60.

β.* *Sm.* leaves smaller narrower. *S. arbutifolia,—S. myrsinites, Linn. Lapp. p.* 7. *f.* 6. *t.* 8. *f. f. Fl. Dan. t.* 1054.

Highland mountains, but rare. Craigalleach, *Mr. Borrer.* Brae Riach, *Greville, Arnott, Hooker.* Clova mountains, *Mr. T. Drummond.* β. Craigalleach. *Fl.* June. ♄.—A low glossy bushy *shrub*, with thick much branching *stems* and *leaves* which Wahlenberg not inaptly compares to those of *Betula nana*, and which frequently remain, withered indeed, till the following year, being much and prominently veined. The *flowers* appear when the plant is in full leaf. *Scales of the catkin* small, blackish, with long silky hairs. Plants very dark, almost black when dry. My Craigalleach specimens agree not only with Lapland ones, but also with a specimen from the Linnæan Herb. in my possession.

procumbens

63. S. ~~*lævis*~~, (*smooth-leaved alpine Willow*); leaves oval (rarely acute) obscurely serrated shining quite glabrous, germens nearly sessile lanceolate very silky, style very short cleft almost to the base, stigmas short bifid obtuse.

Highlands of Scotland. Glen Co, *Rev. Dr. Stuart*, (*Borrer.*) Breadalbane mountains 1801, *Mr. Winch.* Craigalleach, *Mr. Borrer.* Brae-Riach, one of the Cairn-gorum range. *Fl.* June. ♄.—A low *shrub*, bearing a considerable resemblance to the last, but I think it is truly distinct. I have long had from Mr. Winch both cultivated and wild specimens. This, in all its parts, especially the foliage, *catkins* and *germens* is twice the size of the former, with flatter *leaves*, less serrated at the margin and drying to a yellowish-brown colour. The *germen, style* and *stigma*, too, will be found to differ from those of *S. myrsinites*, and the scales are much longer and more hairy. It is a beautiful shrub, and has I believe long been cultivated in the Edinburgh Bot. Garden, where it retains all its characters. This seems to be the *S. retusa, With. Bot. Arr. ed.* 4. *v.* 2. *p.* 49. *with a fig.*

*18. Herbaceæ. *Borr.* *Minute shrubs, remarkable for the small, few-flowered catkins.*

H. 64. S. *herbácea*, Linn. (*least Willow*); leaves orbicular serrated glabrous shining veined, germens sessile lanceolate glabrous, style and stigmas bifid, catkins of few flowers. *Engl. Bot. t.* 1907. *Hook. Scot. i. p.* 283. *Engl. Fl. v. iv. p.* 200. *Salict. Wob. p.* 123. *t.* 62.

Snowdon, *Sherard;* and other Welsh mountains, *Mr. W. Wilson.* On Skiddaw. Plentiful upon the summits of all the Highland mountains. *Fl.* June. ♄.—The least of our British species; though not so small as is generally supposed, for its *stems* divide and creep below the surface of the earth, scarcely rising an inch above.

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* Scarcely *S. procumbens* of Mr. Forbes in *Salict. Wob.* as quoted by that author, p. 121. There is also some mistake in the note in that page, respecting my having named the plant *S. elliptica.* Mr. Robertson, indeed, sent that plant to Mr. Borrer under the name of *S. elliptica*; but I am unacquainted with it.

* 19. Hastatæ. *Borr. Low shrubs, with very broad leaves and exceedingly shaggy and silky catkins.*

65. S. *hastáta*, Linn. (*Apple-leaved Willow*); leaves broadly elliptical waved thin and crackling quite glabrous glaucous beneath, stipules large heart-shaped about as long as the footstalks, germens on a short stalk lanceolate acuminated glabrous, styles elongated, stigmas cloven, scales very shaggy with long silky hairs. *Salict. Wob. p.* 69. *t.* 35.—*S. malifolia, Sm. Fl. Brit. p.* 1053. *Engl. Bot. t.* 1617. *Engl. Fl. v. iv. p.* 180. *Salict. Wob. p.* 71. *t.* 36.

Scotland; *Mr. Dickson.* Sands of Barrie, near Dundee, *Mr. T. Drummond.* Norfolk? *Mr. Crowe. Fl.* May. ♄.—From 2 to 6 feet high. Remarkable for its broadly elliptical, shortly acuminated *leaves*, large *stipules* and very silky or shaggy, compact *catkins*, about an inch and a half long. Mr. Borrer assures me that *S. malifolia, Sm.* is only a state of *S. hastata, Linn.*, with a more attenuated base to its leaf; and this opinion is confirmed by Mr. Forbes, who received from Sir J. E. Smith plants of *S. malifolia*, and found that the leaves of the vigorous shoots became cordate at the base.

66. S. *lanáta*, Linn. (*woolly broad-leaved Willow*); leaves broadly oval pointed entire shaggy glaucous beneath, catkins sessile clothed with long yellow silky hairs, germen nearly sessile lanceolate glabrous longer than the style, stigmas undivided. *Engl. Fl. v. iv. p.* 205. *Hook. in Engl. Bot. Suppl. t.* 2624. *Salict. Wob. p.* 141. *t.* 71. *f.* 2.—*S. chrysanthos, Fl. Dan. t.* 1057?

Scottish mountains, rare. Head of the Glen of Dole, 2 miles west of Acharne the uppermost farm house of Clova, Angus-shire; *Mr. T. Drummond. Fl.* May. ♄.—About 3 feet high, with large pale greyish shaggy foliage, and *catkins* that may be reckoned among the handsomest of the Genus. The species Wahlenberg reckons the most beautiful in Sweden, if not in the whole world. "The splendid golden catkins," he justly observes, "at the ends of the young branches, light up, as it were, the whole shrub, and are accompanied by the tender foliage, sparkling with gold and silver." The young plant is clothed with copious, long, silky, yellowish hairs. Sir J. E. Smith refers to the *Fl. Dan. S. caprea*, as this plant; but it has the *style* cleft and the *stigmas* bipartite. Again, in the *S. chrysanthos* of the same work, though in other respects it represents our plant, there are 2 *styles* given in the plate; so that Mr. Forbes with justice doubts if it be the same. The *stamens* are 2 or 3 in the real *S. lanata*, with their filaments more or less combined.

ORD. II. TRIANDRIA. 3 *Stamens.*

2. EMPÉTRUM. *Linn.* Crow-berry.

Barren fl. Perianth, many imbricating *scales*, of which the 3 inner are often regular, spreading and petaloid. *Stam.* 3, with long filaments. *Rudiment* of a pistil with a many-cleft *stigma.* *Fertile fl.* *Perianth*, as in the barren. *Germen* globose. *Style* short. *Stigma* dilated, peltate, rayed. *Berry* superior, globose, with 6—9 *seeds.*—*Nat. Ord.* EMPETREÆ. *Nutt.*—Name; εν, *in*, and πετρος, a *stone;* growing in stony places.

H 1. E. *nígrum*, Linn. (*black Crow-berry or Crake-berry*); procumbent, leaves linear-oblong. *Engl. Bot. t.* 526. *Hook. Scot. i. p.* 287. *Engl. Fl. v. iv. p.* 234.

Mountainous heaths in the north, abundant. *Fl.* May. ♄.—A small, procumbent, much branching *shrub*, whose *leaves* have their margins so recurved as to meet behind. *Flowers* axillary towards the summit of the branches, small, purplish. *Berries* black, clustered, affording an abundant food to the moor-game. Boiled in alum they yield a blackish-brown dye. A smaller bushy *var.* is cultivated in gardens, under the name of *E. scoticum*, on which I have found perfect flowers.—The *Crowberry* is the badge of the Clan *M'Lean.*

3. RÚSCUS. *Linn.* Butcher's-broom.

Barren fl. *Perianth* single, of 6 leaves. *Filaments* combined at the base. *Anthers* 3—6. *Fertile fl.* *Perianth* single, of 6 leaves. *Nectary* tubular. *Style* 1. *Stigma* 1. *Berry* superior, 3 celled; *cells* 2-seeded.—*Nat. Ord.* SMILACEÆ. *Br.*—Name; anciently *Bruscus;* from *Beuskelen*, Celtic, meaning *Box-Holly.*

1. R. *aculeátus*, Linn. (*common Butcher's-broom*); stem rigid branched, leaves ovato-acuminate very rigid and pungent bearing the solitary flower on their upper surface. *Engl. Bot. t.* 560. *Hook. Scot. i. p.* 286. *Engl. Fl. v. iv. p.* 235.

Bushy and heathy places and woods, especially in a gravelly soil. Abundant in the south of England; rare in Scotland. Bothwell woods; S. Kelder woods near Ayr, *Mr. Jas. Wilson.* *Fl.* March, Apr. ♃.—*Flowers* minute, white, arising from the disk of the evergreen *leaves.* *Berry* red.

(*See* Valeriana dioica *in* CL. III. *Some* Salices *in* Ord. I.)

ORD. III. TETRANDRIA. 4 *Stamens.*

4. VÍSCUM. *Linn.* Misseltoe.

Barren fl. *Cal.* obsolete. *Pet.* 4, ovate, fleshy, united at the base and bearing each a single anther adnate with the upper surface. *Fertile fl.* *Cal.* an obscure margin, superior. *Petals* 4, erect, ovate, very minute. *Stigma* sessile. *Berry* inferior, bearing one *seed*, with 1—2 *Embryos*, sometimes 3 (*Mr. W. Wilson*). *Nat. Ord.* LORANTHEÆ. *Juss.*—Name, ιξος, Greek, from *gwid*, Celtic, *the shrub*, par excellence, a sacred plant with our ancestors.

1. V. *álbum*, Linn. (*common Misseltoe*); leaves lanceolate obtuse, stems dichotomous, heads of flowers in the axils of an upper pair of leaves. *Engl. Bot. t.* 1470. *Hook. Scot. i. p.* 288. *Engl. Fl. v. iv. p.* 236.

Parasitic; mostly on apple-trees, very seldom on the oak: frequent in the southern parts of England. Meikleour, Scotland, *Mr. S. Murray. Fl.* May. ♄.—Whole plant of a very yellow hue, thick and succulent. The *Misseltoe* was held a sacred plant by the ancient Britons.

5. Hippóphae. *Linn.* Sallow-thorn.

Barren fl. collected into a small sort of *catkin*, each *scale* bearing a flower. *Perianth* single, of 2 deep, roundish valves. *Anthers* linear, sessile. *Fertile fl.* solitary. *Perianth* single, tubular, cloven at the summit. *Germen* superior. *Style* short. *Stigma* subulate, exserted. *Nut* one-seeded, surrounded by the large, coloured, berry-like *calyx*.—*Nat. Ord.* Eleagneæ. *Br.*—Name ἱππος, a *horse*, and φαω, to *brighten*, but why so called cannot be determined.

H. 1. H. *rhamnoídes*, Linn. (*common Sallow-thorn, or Sea Buckthorn*). *Engl. Bot. t.* 425. *Engl. Fl. v. iv. p.* 238.

Sand hills and cliffs upon the coast of the east and south-east of England. *Fl.* May. ♄.—A thorny *shrub*, 4—5 feet high, larger when cultivated in gardens, as it is on account of its silvery *leaves*, which are linear-lanceolate. *Flowers* very small, axillary, coming out with the young *leaves*. *Berry* bright orange.

6. Myríca. *Linn.* Gale.

Barren fl. *Scales* of the *catkin* concave. *Perianth* 0. *Fertile fl.* *Scales* of the *catkin* concave. *Perianth* 0. *Styles* 2. *Drupe* 1-celled, 1-seeded.—*Nat. Ord.* Amentaceæ. *Juss.*—Name, μυρικη, in Greek, synonymous with the *Tamarix*.

H. 1. M. *Gále*, Linn. (*sweet Gale or Dutch Myrtle*); leaves lanceolate broader upwards serrated, stem shrubby. *Engl. Bot. t.* 562. *Hook. Scot. i. p.* 288. *Engl. Fl. v. iv. p.* 239.

Bogs and moory ground, most abundant, especially in Scotland. *Fl.* May. ♄.—The plant diffuses an agreeable smell,

> "*Gale* from the bog shall waft Arabian balm,"

and the *leaves* have a bitter taste, hence they are sometimes employed instead of hops. In Isla and Jura the inhabitants scent their clothes with them, and in many parts of Scotland, beds are made of the twigs.—The *Gale*, or *Bog-myrtle*, is the badge of the Clan *Campbell*.

(*See* Rhamnus *in* Cl. V. Urtica *in* Cl. XXI.)

ORD. IV. PENTANDRIA. 5 *Stamens.*

7. Húmulus. *Linn.* Hop.

Barren fl. *Perianth* single, of 5 leaves. *Anthers* with 2 pores at the extremity. *Fertile fl.* *Scales* of the *catkin* large, persistent, concave, entire, single-flowered. *Perianth* 0. *Styles* 2. *Seed* 1.—*Nat. Ord.* Urticeæ. *Juss.*—Name, *humus, rich soil* or *mould*, in which the plant flourishes.

H. 1. H. *Lúpulus*, Linn. (*common Hop*). *Engl. Bot. t.* 427. *Hook. Scot. i. p.* 288. *Engl. Fl. v. iv. p.* 240.

Thickets and hedges in various places, scarcely indigenous. *Fl.* July. ♃.—*Stems* long, weak and climbing, scabrous. *Leaves* petiolate, opposite, 3—5-lobed, serrated, veiny, rough. *Flowers* greenish-yellow. The fragrant bitter, so valuable in the manufacture of Beer, resides in the *catkins*, or *cones* of the *hop*, as they are often called.

(*See* Ribes *in* Cl. V. Bryonia *in* Cl. XXI. Salix *in* Ord. I.)

Beer at first signified an infusion of barley flavoured with the Hop
Ale the same infusion flavoured with any other herb." Barley-wine
was used in Egypt Herodotus. abundant on the Siberian steppes.

ORD. V. HEXANDRIA. 6 *Stamens.*

8. Támus. *Linn.* Black Bryony.

Barren fl. Perianth single, in 6, deep segments. *Fertile fl. Perianth* single, in 6 deep segments, contracted at the neck, superior. *Stigmas* 3. *Berry* of 3 cells.—*Nat. Ord.* Smilaceæ, *Juss.*—Name, supposed to be the *Uva Taminia* of Pliny, or *Black Bryony.*

H. 1. T. *commúnis*, Linn. (*common Black Bryony*); leaves undivided cordate acute. *Engl. Bot. t.* 91. *Engl. Fl. v. iv. p.* 241.

Hedges and thickets, in England. *Fl.* June. ♃.—*Root* very large, acrid, black externally, fleshy. *Stems* long, twining and reaching among trees and bushes, to a great extent. *Flowers* greenish-white. *Berry* red.

The young shoots boiled like Asparagus are a great dainty
at Smyrna. Dr Rolleston.

(*See* Rumex *in* Cl. VI.)

ORD. VI. OCTANDRIA. 8 *Stamens.*

9. Pópulus. *Linn.* Poplar.

Barren fl. Scales of the *catkins* jagged. *Anthers* 8—30, arising from a turbinate, oblique, entire, single *perianth. Fertile fl. Scales* of the *catkin* jagged. *Perianth* turbinate. *Stigmas* 4 or 8. *Caps.* superior, 2-celled, 2-valved, many-seeded. *Seeds* comose.—*Nat. Ord.* Amentaceæ. *Juss.*—Name, *populus*, or the *tree of the people*, as it was esteemed to be in the time of the Romans and of the French revolution. The *Poplar* is the badge of the Clan *Ferguson.*

1. P. *álba*, Linn. (*great white Poplar or Abele*); leaves roundish-cordate lobed toothed glabrous above downy and very white beneath, fertile catkins ovate, stigmas 4. *Engl. Bot. t.* 1618. *Hook. Scot. i. p.* 288. *Engl. Fl. v. iv. p.* 243.

Moist and mountain woods. "A few stunted plants of *P. alba* compose all the trees of the island of Lewes." *M'Culloch. Fl.* Apr. ♄.—A large *tree*, with smooth *bark* and spreading *branches;* of very rapid growth. The *wood* is white and soft and only used for coarse purposes.

2. P. *canéscens*, Sm. (*grey Poplar*); leaves roundish deeply

waved toothed hoary and downy beneath, fertile catkins cylindrical, stigmas 8. *Engl. Bot. t.* 1619. *Engl. Fl. v. iv. p.* 243.

Wet turfy meadows and dry heaths: frequent in Norfolk. *Sm. Fl.* March. ♄.—*Tree* tall and handsome, of slower growth than the preceding, and producing better *wood*.

3. P. *trémula*, Linn. (*Aspen*); leaves nearly orbicular broadly toothed glabrous on both sides, stalks compressed, "stigmas 4 erect auricled at the base." *Engl. Bot. t.* 1809. *Hook. Scot. i. p.* 289. *Engl. Fl. v. iv. p.* 244.

Moist woods; frequent in Scotland, and even at an elevation of 1500 feet above the level of the sea, on Ben More, in Mull, (*Mr. Trevelyan.*) *Fl.* March, Apr. ♄.—This *tree* is well known by the tremulous movement of its *leaves* with the slightest breath of wind. The motion is aided by the compression of the stalk. The *bark* is said to be a favourite food of the beavers; and the *wood* serves for pack-saddles, milk-pails, &c. Lightfoot tells us that the Highlanders entertain a superstitious notion that our Saviour's cross was made of this tree, and for that reason they suppose that its leaves can never rest.

4. P. *nígra*, Linn. (*black Poplar*); leaves deltoid acute serrated glabrous on both sides, fertile catkins cylindrical lax, "stigmas 4." *Engl. Bot. t.* 1910. *Hook. Scot. i. p.* 289. *Engl. Fl. v. iv. p.* 245.

Watery places and banks of rivers. Scarcely indigenous to Scotland. *Fl.* Apr. ♄.—Forms a very large *tree* of quick growth, having a light and not valuable *wood;* as is the case with most trees that come soon to perfection.

10. Rhodíola. *Linn.* Rose-root.

Barren fl. *Cal.* 4-partite. *Pet.* 4. *Glands* 4, emarginate. *Fertile fl.* *Cal.* 4-partite. *Pet.* 4. *Glands* 4, emarginate. *Germens* 4. *Caps.* 4, many-seeded.—*Nat. Ord.* Crassulaceæ. *D.C.*—Name, ῥοδον, *a Rose;* from the scent of the roots.

1. R. *rósea*, Linn. (*Rose-root*). *Engl. Bot. t.* 508. *Hook. Scot i. p.* 289. *Engl. Fl. v. iv. p.* 216.

Wet rocks, on the high mountains of the north of England and Ireland and in the north-west of Scotland, abundant; likewise on cliffs by the sea-shore. *Fl.* June. ♃.—*Root* large, woody, when dry yielding a smell that has been compared to that of *Roses*. *Stem* 6—8 or 10 inches high, simple. *Leaves* numerous, obovato-oblong, serrated at the point, and in the *sterile plant* often tipped with a reddish tinge. *Flowers* in a small, compact, terminal *cyme*, yellow; agreeing with *Sedum* in every thing but the number of their parts, and having the habit of *S. Telephium.*—The *Rose-root* is the badge of the Highland Clan *Gunn.*

ORD. VII. ENNEANDRIA. 9 *stamens.*

11. Mercuriális. *Linn.* Mercury.

Barren fl. *Perianth* single, tripartite. *Stam.* 9—12. *Anthers* of 2, globose lobes. *Fertile fl.* *Perianth* single, tripartite. *Styles*

2. *Caps.* 2-celled; *cells* 1-seeded.—*Nat. Ord.* EUPHORBIACEÆ. *Juss.*—Name; the God *Mercury* is said to have discovered the virtues, of what kind soever they may be, of this plant.

H. 1. M. *perénnis*, Linn. (*perennial or Dog's Mercury*); stem perfectly simple, leaves rough, root creeping perennial. *Engl. Bot. t.* 1872. *Hook. Scot. i. p.* 289. *Engl. Fl. v. iv. p.* 248.

Woods and shady places, abundant. *Fl.* Apr. May. ♃.—About 1 foot high. *Leaves* mostly on the upper part of the *stem*, ovate, serrated. *Flowers* in axillary, short, lax *spikes.* The *plant* in drying often becomes of a bluish, or blackish, green.

2. M. *ánnua*, Linn. (*annual Mercury*); stem with opposite branches, leaves glabrous, root fibrous annual. *Engl. Bot. t.* 559. *Hook. Scot. i. p.* 290. *Engl. Fl. v. iv. p.* 248.

Waste places about towns and villages, but not common. *Fl.* August. ⊙.—One foot high. *Sterile flowers* in long, axillary, interrupted *spikes.*

12. HYDRÓCHARIS. *Linn.* Frog-bit.

Flowers spathaceous. *Barren fl. Cal.* in 3 deep segments. *Cor.* of 3 petals. *Stam.* 9, in 3 rows, within which are 3 imperfect *styles. Fertile fl. Cal.* in 3 deep segments. *Pet.* 3. *Styles* 6, each with 2 *stigmas. Caps.* inferior, coriaceous, roundish, 6-celled, many-seeded.—*Nat. Ord.* HYDROCHARIDEÆ, *Juss.*—Name; ὕδωρ, *water,* and χαιρω, *to rejoice:* being aquatic plants.

1. H. *Mórsus Ránæ*, Linn. (*common Frog-bit*). *Engl. Bot. t.* 808. *Hook. Scot. i. p.* 290. *Engl. Fl. v. iv. p.* 250.

Ditches and ponds in England and Ireland. Scarcely found in Scotland. *Fl.* July. ♃.—Floating, and sending down from the horizontal *stems*, long, fibrous *radicles. Leaves* petioled, reniform, entire. *Flowers* subumbellate, arising from pellucid membranous *spathas*, large, white, delicate.

(ORD. Decandria. *See* Silene *and* Lychnis *in* CL. X.—ORD. Icosandria. *See* Rubus *and* Fragaria *in* CL. XII.—ORD. Polyandria. *See* Stratiotes *in* CL. XXI. *See* Populus *in* ORD. VI.)

ORD. VIII. MONADELPHIA. *Stamens combined.*

13. JUNÍPERUS. *Linn.* Juniper.

Barren fl. Scales of the *catkin* subpeltate. *Perianth* 0. *Stam.* 4—8, 1-celled. *Fertile fl. Scales* of the *catkin* few, united, at length fleshy and surrounding the 3-seeded *berry.*—*Nat. Ord.* CONIFERÆ, *Juss.*—Name, *jeneprus*, in Celtic, *rude, rough,* as is the plant itself.

1. J. *commúnis*, Linn. (*common Juniper*); leaves 3 in a whorl mucronate spreading or imbricated longer than the berry. *Engl. Bot. t.* 1100. *Hook. Scot. i. p.* 290. *Engl. Fl. v. iv. p.* 251.

H. Anacharis Alsinastrum
see Babington p. 312.

β. *nana*, small, procumbent. *J. nana, Willd.—Engl. Fl. v. iv.* 252.

Woods and heaths, frequent. β. abundant in the mountains of Scotland and Ireland and in low ground in the northern parts. *Fl.* May. ♄.—A *shrub*, extremely variable in size, bearing numerous, linear, mucronate and pungent *leaves*. *Flowers* axillary, small. The *berries* which are bluish black, form an important article of commerce in Holland, where they are employed in the distillation of Geneva, and impart to it that peculiar flavour which our distillers try to imitate by oil of turpentine. The wood is reddish and employed for veneering. The *Juniper* is the badge of the Clan *Murray*.

14. Taxus. *Linn.* Yew.

Barren fl. Perianth single at the base. *Stam.* numerous. *Anthers* peltate, 6—8-celled; *cells* opening beneath. *Fertile fl. Perianth* single, urceolate, scaly. *Style* 0. *Drupe* fleshy, perforated at the extremity.—*Nat. Ord.* Coniferæ, *Juss.*—Name; *τοξον*, an *arrow;* it is said because arrows were poisoned with its juice.

1. T. *baccáta*, Linn. (*common Yew*); leaves 2-ranked crowded linear acute, flowers axillary sessile. *Engl. Bot. t.* 746. *Hook. Scot. i. p.* 290. *Engl. Fl. v. iv. p.* 253.

Mountain woods. *Fl.* March. ♄.—A low *tree*, but with a *trunk* often of considerable diameter. The noble *yew* which still remains in Fortingal Church-yard at the entrance to Glen Lyon, measured, according to Pennant, 56½ feet in circumference. It is the badge of the Clan of the *Frasers*. The *wood* is hard, beautifully veined, much valued for Cabinet-makers' work, and was formerly still more highly prized for making bows, and on that account is said to have been planted extensively by our ancestors, in church-yards. *Leaves* distichous, linear, persistent, deep green. *Drupes* red, esteemed poisonous. The *Irish*, or Florence-court *Yew*, now generally known in our gardens, has scattered *leaves*, and as Mr. J. T. Mackay observes, a different habit from the common kind, and is deserving of a more accurate investigation. It is *T. fastigiata* of *Lindl. Syn.* but, if a species, is not wild in Britain.

CLASS XXIII. POLYGAMIA.

Stamens and pistils on the same or different flowers and on the same or different plants, and having 2 different kinds of Perianth.

ORD. I. MONŒCIA. *Flowers different on the same plant.*

1. Átriplex. *Linn.* Orache.

Sterile fl. and *united fl.* (which too are mostly barren). *Perianth* single, 5-partite, inferior. *Stam.* 5. *Style* bipartite. *Pistilliferous fl. Perianth* single, of 2, persistent, enlarged valves. *Stam.* 0.

Fruit depressed, 1-seeded, covered by the *Cal.—Nat. Ord.* CHENOPODEÆ, *Juss.*—Name ; *α, not,* and *τρεφειν, to nourish.*

H. 1. A. *portulácoides,* Linn. (*shrubby Orache or Sea Purslane*); stem shrubby, leaves obovato-lanceolate entire silvery white. *Engl. Bot. t.* 261. *Hook. Scot. i. p.* 291. *Engl. Fl. v. iv. p.* 256.

Muddy sea-shores, England and Ireland. Near Helensburgh, Scotland. *Fl.* July, Aug. ♄.—One to two feet and more high, with small, yellowish *flowers* in axillary *spikes.*

2. A. *laciniáta,* Linn. (*frosted Sea Orache*); stem herbaceous spreading, leaves ovato-deltoid dentato-sinuate very mealy beneath. *Engl. Bot. t.* 165. *Hook. Scot. i. p.* 291. *Engl. Fl. v. iv. p.* 257.

Sandy sea-shores, not uncommon. *Fl.* July, Aug. ⊙.—Whole *plant* hoary. *Flowers: sterile ones* in terminal *spikes;* the others axillary, nearly solitary, *fertile.*

H. 3. A. *pátula,* Linn. (*spreading Halberd-leaved Orache*); stem herbaceous spreading, leaves triangular-hastate glabrous above irregularly toothed, the upper ones entire, perianth of the fruit more or less tuberculated at the sides. *Engl. Bot. t.* 936. *Hook. Scot. i. p.* 291. *Engl. Fl. v. iv. p.* 257.

Cultivated and waste ground, and in salt marshes. *Fl.* July. ⊙.—*Stems* straggling; *branches* long, striated. *Flowers* in small *clusters,* in long, interrupted axillary *spikes.*

H. 4. A. *angustifólia,* Sm. (*spreading narrow-leaved Orache*); "stem herbaceous spreading, leaves lanceolate entire, the lower ones partly 3-lobed, calyx of the fruit halberd-shaped, slightly warty at the sides." *Sm.—Engl. Bot. t.* 1774. *Hook. Scot. i. p.* 291. *Engl. Fl. v. iv. p.* 258.

Cultivated and waste ground. *Fl.* July. ⊙.—This seems to be but a narrow-leaved *var.* of the preceding.

5. A. *erécta,* Huds. (*upright Spear-leaved Orache*); "stem herbaceous erect, leaves ovato-lanceolate lower ones sinuated, calyx of the fruit all over armed with sharp tubercles." *Sm.—Engl. Bot. t.* 2223. *Engl. Fl. v. iv. p.* 260.

Waste ground, very rare. Near Battersea fields, (*Sm.*). *Fl.* Aug. ⊙. —I have seen no authentic specimens of this, and will not venture an opinion upon it. Indeed, most of the species are very variable, and so uninviting, that few are at the trouble of investigating them as they should be done.

6. A. *littorális,* Linn. (*Grass-leaved Sea Orache*); stem herbaceous erect, leaves all linear entire or toothed, perianth of the fruit sinuated and muricated at the back. *Engl. Bot. t.* 708. *Hook. Scot. i. p.* 292. *Engl. Fl. v. iv. p.* 260.

Muddy salt-marshes, chiefly on the east coast. *Fl.* July. ⊙.—The under side of the *leaves* and *flowers* are mealy. The latter are in rather crowded, axillary and terminal *spikes.*

7. A. *pedunculáta,* Linn. (*stalked Sea Orache*); stem herbaceous

zigzag with spreading branches, leaves obovato-lanceolate, seed-bearing flowers cuneate 2-horned, on long stalks. *Engl. Bot. t.* 232. *Engl. Fl. v. iv. p.* 261.—*Diotis atriplicoides, M. Bieb.*

On the east and south coast of England, in muddy salt marshes. Cunnamara, Ireland; *Dr. Wade. Fl.* Aug. Sept. ☉.—Whole *plant* covered with scaly mealiness; well distinguished from all the other species by its long *peduncles* and the peculiar shape of the seed-bearing *perianth*, especially when the *fruit* is ripe.

END OF THE PHÆNOGAMOUS OR FLOWERING PLANTS.

CLASS XXIV. CRYPTOGAMIA (*part of*).

Stamens and pistils not visible.

ORD. I. FILICES. *Ferns.*

Ferns & Clubmosses if they live to 100 are impregnated only once & that before the plant has assumed its [illegible] habit. Berkeley

Fructification only of one kind upon the same species. *Capsules* spiked or racemed, or generally collected into *clusters* of various shapes (*sori*) mostly upon the back or margin of the *frond*, naked or covered with an *involucre;* with or without an elastic *ring*. *Seeds* minute.—Perennial *plants*, in perfection during the greater part of the year, especially in the summer months.

iv. I. * *Capsules* 1-*celled, with an articulated, elastic, more or less complete ring, transversely and irregularly opening.* (Polypodiaceæ. *Kaulf.*

1. GRAMMÍTIS. *Sw.* Grammitis.

Sori oblong, sublinear, straight, scattered. *Involucre* none.—Name; γραμμη, *a line*, from the lines of fructifications.

H. 1. G. *Céterach*, Sw. (*scaly Grammitis*); fronds pinnatifid covered beneath with imbricated chaffy scales, segments ovate obtuse, scales entire. *Hook. Scot. ii. p.* 153.—*Scolopendrium Ceterach, Engl. Bot. t.* 1244. *Engl. Fl. v. iv. p.* 315.—*Asplenium Ceterach, Linn.*

Rocks and walls, most abundant in limestone countries, and the south of England and Ireland: rare in Scotland. Near Perth. Dundonald, near Paisley, *Dr. Young.* Carse of Gowrie, *Mr. Jas. Macnab.*

2. POLYPÓDIUM. *Linn.* Polypody.

Sori roundish. *Involucre* 0.—Name; πολυ, *many*, and πȣς, ποδος, *a foot;* from the numerous *roots*, or *segments* of the *fronds*.

H. 1. P. *vulgáre*, Linn. (*common Polypody*); fronds deeply pinnatifid, the segments linear-lanceolate obtuse crenulate approximate, upper ones gradually smaller, root-stock chaffy. *Engl. Bot. t.* 1149. *Hook. Scot. ii. p.* 153. *Engl. Fl. v. iv. p.* 280.

Rocks, walls, trunks of trees and banks, frequent.—The *lobes* are sometimes deeply serrated and even pinnatifid or laciniated, as it has been found in Ireland and Wales, when it becomes the *P. cambricum* of *Linn.*

[illegible]

H 2. P. *Phegópteris,* Linn. (*pale Mountain Polypody*); fronds bipinnatifid, the two lowermost pinnæ standing forward+, their segments linear-lanceolate obtuse entire ciliated, the lowermost ones adnato-decurrent, veins hairy, sori marginal. *Engl. Bot. t.* 2224. *Hook. Scot. ii. p.* 153. *Engl. Fl. v. iv. p.* 282. + or hanging downwards

Shaded rocky places, in mountainous countries.

H 3. P. *Dryópteris,* Linn. (*tender three-branched Polypody*); fronds ternate bipinnate, divisions patulous and deflexed, the segments obtuse subcrenated, sori marginal, root-stock filiform. *Engl. Bot. t.* 616. *Hook. Scot. ii. p.* 153. *Engl. Fl. v. iv. p.* 282.

Dry stony places, in mountainous countries. Common in Scotland.

4. P. *calcáreum,* Sm. (*rigid three-branched Polypody*); "frond 3-branched, branches doubly pinnate erect rather rigid, segments obtuse somewhat crenated, masses of capsules crowded finally confluent." *Sm.—Engl. Bot. t.* 1525. *Engl. Fl. v. iv. p.* 283.

Matlock bath, Derbyshire, in broken limestone ground.—This, which I possess from Sir Jas. E. Smith, seems rather to be distinguished by its thicker and more rigid texture, than by any decided specific character.

3. WOODSIA. *Br.* Woodsia.

Sori scattered, roundish, having, beneath, an *involucre* which is cut at the edge into many, often capillary, segments.—Named in compliment to *Joseph Woods, Esq.*, author of an excellent Monograph of the British Roses, &c.

H 1. W. *ilvénsis,* Br. (*oblong Woodsia*); fronds lanceolate pinnate, pinnæ deeply pinnatifid with many oblong segments which are beneath, as well as the rachis and stipes, chaffy. *Engl. Fl. v. iv. p.* 322. *Hook. in Engl. Bot. Suppl. t.* 2616.—*Acrostichum ilvense, Linn.*

Mountains, very rare. In Wales, *Mr. Lhwyd* and *Mr. W. Wilson.* Near Caldron spout, Teesdale; *Mr. James Backhouse* and *Mr. Hailstone.—Plant* small, 2—3 inches high.

2. W. *hyperbórea,* Br. (*rounded-leaved Woodsia*); fronds lanceolate pinnate, pinnæ ovato-cordate inciso-pinnatifid hairy beneath, sori solitary at length confluent. *Hook. Scot. ii. p.* 153. *Engl. Fl. v. iv. p.* 323.—*Polypodium hyperboreum, Sw.—Engl. Bot. t.* 2023.

On Snowdon in Wales, and Ben Lawers in Scotland.—About the same size as the last, but quite distinct as a species.

4. ASPÍDIUM. *Sw.* Shield-fern.

Sori roundish, scattered. *Involucre* orbicular, fixed by the centre, or orbiculari-reniform and fixed at the sinus.—Name, *ασπις, ασπιδος, a shield,* which its *involucres* resemble, especially those of the first division.

* *Involucre orbicular, fixed by the centre, hence peltate.* (Aspidium. *Br.*)

1. A. *Lonchítis*, Sw. (*rough alpine Shield-fern*); fronds linear-lanceolate pinnate, pinnæ lanceolato-falcate acute ciliato-serrate, the upper base acutely auricled the lower one cuneate, superior pinnæ bearing the fructifications, stipes chaffy. *Hook. Scot. ii. p.* 153. *Engl. Fl. v. iv. p.* 284.—*Polypodium Lonchitis, Linn.*—*Engl. Bot. t.* 797.

Shady clefts of rocks and under stones, on the high mountains of Wales and Scotland.—A very handsome northern *Fern.*

H. 2. A. *aculeátum*, Sw. (*common prickly Shield-fern*); fronds bipinnate, pinnules rigid ovate sublunate acuminate aristate oblique and cuneate at the base and decurrent, the margins faintly serrated spinulose, with a tooth near the base on the upper side, stipes and rachis chaffy. *Engl. Bot. t.* 1562. *Hook. Scot. ii. p.* 154. *Engl. Fl. v. iv. p.* 290.—*Polypodium aculeatum, Linn.*

Moist woods and shady banks.

H. 3. A. *lobátum*, Sw. (*close-leaved prickly Shield-fern*); fronds bipinnate, pinnules scarcely rigid ovate rather obtuse aristate truncate at the base which has a lobe on the upper margin shortly petiolate, the margin deeply serrated and spinulose, stipes and rachis chaffy. *Engl. Bot. t.* 1563. *Hook. Scot. ii. p.* 154. *Engl. Fl. v. iv. p.* 291.

Woods and hedge-banks, in England: I scarcely know if it be found in Scotland.—It has broader, far less rigid *fronds* than the last; and, besides the different shape of its *pinnules*, they are upon short *petioles*, not decurrent with the *rachis*, and have more deeply serrated margins. —Yet I have seen some plants which might almost be considered to unite the two.

H. 4. A. *anguláre*, Willd. (*angular-leaved Shield-fern*); "frond doubly pinnate, leaflets ovate bluntish stalked fringed with bristly serratures, each leaflet with a lateral lobe at the base, the lowermost elongated partly pinnatifid, stalk scaly, ribs all shaggy, cover umbilicated." *Engl. Fl. v. iv. p.* 291.—*A. aculeatum*, β. *Fl. Br. p.* 1122.

Woods and shady places.—I have seen no authentic specimens of this plant; but, judging from the description and references, I should fear it comes very near to one of the two preceding species. What I have received from an accurate Norwich botanist, Mr. R. Wigham, and therefore likely to have been compared with Sir J. E. Smith's plant, is my *A. lobatum.*

Lastraea

** *Involucre orbiculari-reniform, fixed by the sinus.* (Nephrodium. *Rich. Br.*)

5. A. *Oreópteris*, Sw. (*Heath Shield-fern*); fronds pinnate, pinnæ lanceolate pinnatifid glabrous resinoso-glandulose beneath, the segments lanceolate obtuse entire, lowermost ones longer, sori marginal. *Hook. Scot. ii. p.* 154. *Engl. Fl. v. iv. p.* 286.—*Polypodium Oreopteris, Ehrh.*—*Engl. Bot. t.* 1019.

Mountainous countries, in heaths and dry pastures. Abundant in Scotland.

H. 6. A. *Thelýpteris*, Sw. (*Marsh Shield-fern*); fronds pinnate, pinnæ linear-lanceolate pinnatifid glabrous, the segments ovate acute entire, sori marginal contiguous at length confluent. *Hook. Scot. ii. p.* 154. *Engl. Fl. v. iv. p.* 285.—*Polypodium Thelypteris, Linn.*—*Engl. Bot. t.* 1018.

Marshy and boggy places.

H. 7. A. *cristátum*, Sw. (*crested Shield-fern*); fronds linear-lanceolate pinnate, pinnæ cordato-attenuated deeply pinnatifid scarcely again pinnate, segments oblongo-ovate obtuse acutely and doubly serrated. *Engl. Bot. t.* 2125. *Hook. in Fl. Lond. N. S. t.* 113. *Engl. Fl. v. iv. p.* 289.—*Polypodium cristatum, Linn.*

Boggy heaths, very rare. Near Holt, Norfolk, *Rev. R. B. Francis.* Westleton, Suffolk, *D. E. Davey, Esq.* In Lancashire, *Mr. Shephard.* A species most distinct, even in the outline of its *frond*, which is narrowed below, from any of the following. Coxton bogs. Notts.

H. 8. A. *Filix mas*, Sw. (*male Shield-fern*); fronds bipinnate, pinnules oblong obtuse serrated, sori near the central nerve, stipes and rachis chaffy. *Engl. Bot. t.* 1458, *and t.* 1949, (*A. cristatum*).—*Polypodium Filix mas, Linn.*

Woods and shady banks, frequent.—A most beautiful, though a very common fern; 3—4 feet high; the *fronds* growing in a circle.

H. 9. A. *spinulósum*, Willd. (*prickly-toothed Shield-fern*); fronds bi-, or below, tripinnate, pinnules oblong distinct inciso-pinnatifid, segments mucronato-serrate, stipes chaffy. *A. dilatatum, Hook. Scot. ii. p.* 154.

α. fronds triangulari-ovate, lower primary pinnæ only once pinnate. *A. spinulosum, Engl. Bot. t.* 1460. *Engl. Fl. v. iv. p.* 292.—*Polypodium spinulosum, Retz.*

β. fronds triangulari-ovate, lower primary pinnæ bipinnate, pinnules often convex. *A. dilatatum, Willd.*—*Engl. Bot. t.* 1461. *Engl. Fl. v. iv. p.* 293.—*Polypodium dilatatum, Hoffm.*

A. rigidum [illegible] fronds oblong, lower primary pinnæ bipinnate or tripinnate. *A.* Appen. 31. *rigidum, Swartz.*

δ. pinnules and segments very unequal in size and in their spinulose serratures.

Moist woods, Alder-cars, and shady and rocky places, abundant. α. most frequent in rocky and subalpine countries. β. mostly in moist woods. γ. Yorkshire, *Rev. W. T. Bree. Mr. James Backhouse.* δ. Bingley Wood, near Halifax, *Mr. W. Wilson.* About Norwich, *Mr. R. Wigham.* Glen Falloch, Scotland.

This is an extremely variable plant, it must be confessed; but an attentive observer of nature will not find it difficult to trace the different states, under some or other circumstances passing into each other. The texture of the *frond*, too, is highly variable. Generally it is the most compound of all our British *Aspidia*, but in a *var.* which I take also to be the *A. rigidum* of Swartz, the oblong or almost lanceolate *frond* is never more than bipinnate, and the *pinnules* not even distinctly pinnatifid. In stony places on the Scottish mountains, especially those of the Breadalbane and Cairngorum ranges, the *frond* is almost ovate, but with nearly parallel sides, the whole compact in its ramification and loaded with fructifications. I fear the following species ought to be enumerated among the above list; but not having seen authentic specimens, I prefer giving it in the words of Sir J. E. Smith.

10. A. *dumetórum*, Sm. (*thicket Shield-fern*); "frond doubly pinnate, leaflets pinnatifid, lobes with terminal sharp prickly teeth, common stalk scaly, cover orbicular flat with a deep notch." *Sm.—Engl. Fl. v. iv. p.* 294.

Bushy, stony and rocky places, in the north. (*Sm.*)

5. Cistópteris. *Bernhardi.* Bladder-fern. (Cystea, *Sm.*)

Sori roundish. *Involucre* inserted, by its broad cucullate base, at the underside of the *sorus*, opening by a lengthened free extremity, which points towards the apex of the frond.—Name; κιστη, a *little box*, and πτερις, a *Fern*.—I have taken a different view of the structure of the *Involucre* from Sir J. E. Smith, and I trust a correct one. Its texture is thin and delicate and altogether widely different from *Aspidium*. Species with the above character exist in North and South America, as well as in Europe.

H 1. C. *dentáta*, (*toothed Bladder-Fern*); fronds bipinnate, pinnæ lanceolate, pinnules ovate obtuse bluntly and unequally toothed rarely subpinnatifid, rachis winged.

α. fronds oblongo-lanceolate. *Cystea dentata, Engl. Fl. v. iv. p.* 300.—*Aspidium dentatum, Sw.—Hook. Scot. ii. p.* 155.—*Cyathea dentata, Engl. Bot. t.* 1588.—*Polypodium dentatum, Dicks.*

β. fronds oblongo-ovate. *Cystea angustata, Engl. Fl. v. iv. p.* 301.—*Polypodium rhæticum, Dicks.—Cyathea fragilis,* β. *Sm.*

North of England and Wales, abundant. Scotland, *Mr. Dickson.* Ben Lawers.—This is certainly the most common species of the Genus in Wales, where it seems to hold the place that *C. fragilis* does in Scotland, and from which I think it is distinct. I possess specimens of *Cystea dentata* and *C. angustata* from Mr. Dickson, and I can find no difference, except that the latter is a little broader in the frond than the former, and perhaps the pinnules are rather more divided, so as to approach nearer to the following species. This is the same as the *Aspidium tenue* of American Botanists.

H 2. C. *frágilis*, Bernh. (*brittle Bladder-Fern*); fronds bipinnate, pinnæ lanceolate, pinnules ovato-lanceolate deeply pinnatifid, segments ovate or lanceolate toothed, rachis winged. *Cystea fragilis, Engl. Fl. v. iv. p.* 298.—*Aspidium fragile, Sw.—Hook. Scot. ii. p.* 155.—*Cyathea fragilis, Engl. Bot. t.* 1587.

Rocks and walls, in the mountainous parts of Great Britain. Cheddar, Somersetshire. *Rev. Mr. Berkeley.* Most abundant in Scotland.—It will be seen that this differs from the preceding, principally in its more *pinnæ* and narrower segments.

3. C. *alpína*, Desv. (*laciniated Bladder-Fern*); fronds tripinnate, pinnules confluent ovato-oblong pinnatifid rather spreading, the segments broadly and shortly linear obtuse, with 2 or 3 blunt erect teeth, rachis winged. *Aspidium alpinum, Sw. Willd.—Polypodium alpinum, Jacq. Ic. v. iii. t.* 642. (*excellent*).—*Cystea regia, Engl. Fl. v. iv. p.* 302.—*Cistopteris regia, Desv.—Cyathea regia, Forst.—Fl. Br. p.* 1140.—*Cyathea incisa, Engl. Bot. t.* 163.—*Aspidium regium, Hook. Scot. ii. p.* 155.—*Polypodium regium, Linn ?*

On a wall (since destroyed) at Low Layton, Essex, plentifully; *Mr. T. F. Forster.*—Having received authentic specimens of the Layton plant, from Mr. E. Forster, and compared them with continental ones, and with figures and descriptions of *Aspidium alpinum*, especially the plates of Jacquin and Schkuhr, I can without hesitation, pronounce them to be identical. But I dare not introduce the Welsh, nor the Scotch station; believing, as I do, that the *C. fragilis* has there been mistaken for it. The species is most distinct, the *fronds* being more divided even than the last species, the divisions linear, with few and very blunt teeth. The *fructification* is exactly that of a *Cistopteris.*

6. ASPLÉNIUM. *Linn.* Spleenwort.

Sori oblong or linear. *Involucres* of the same shape, superficial, arising from the lateral veins and opening on one side longitudinally towards the central nerve or midrib.—Name, α, *not*, and σπλην, *the spleen*, the plant having been supposed useful in removing obstruction of the viscera.

1. A. *septentrionále*, Hull, (*forked Spleenwort*); fronds bipartite, segments linear acutely 3-toothed at the extremity. *Engl. Bot. t.* 1007. *Hook. Scot. ii. p.* 155. *Hook. in Fl. Lond. t.* 162. *Engl. Fl. v. iv. p.* 301.—*Acrostichum septentrionale, Linn.*

Clefts of rocks, in mountainous parts of the north. Caernarvonshire, *Mr. Lhwyd.* Llyn y Cwm, N. Wales, extremely scarce, *Mr. W. Wilson.* On Ingleborough and at Ambleside, (*Engl. Fl.*). Arthur's seat, Edinburgh, plentiful. Stenton rock, Dunkeld, *Mr. Arnott.*

2. A. *alternifólium*, Wulf. (*alternate-leaved Spleenwort*); fronds pinnate, pinnæ alternate lanceolato-cuneate toothed at the apex, lower ones trifid and toothed. *Engl. Bot. t.* 2258. *Hook. Scot. ii. p.* 156. *Engl. Fl. v. iv. p.* 308.—*A. germanicum, Willd.*

Rocks, Scotland, very rare. Near Kelso, *Mr. Dickson;* and near Perth, *Mr. Bishop.*

3. A. *Trichómanes*, Linn. (*common Wall Spleenwort*); fronds pinnate, pinnæ roundish oblong obtuse crenate truncato-cuneate at

the base, (stipes and rachis black). *Engl. Bot. t.* 576. *Hook. Scot. ii. p.* 155. *Engl. Fl. v. iv. p.* 305.

Rocks and walls, common.

H. 4. A. *víride*, Huds. (*green Spleenwort*); fronds pinnated, pinnæ roundish ovate obtusely serrate cuneate at the base (rachis green). *Engl. Bot. t.* 2257. *Hook. Scot. ii. p.* 155. *Engl. Fl. v. iv. p.* 306.

Moist rocks, north of England, Wales, and Scotland. Frequent in the Highlands.

H. 5. A. *marínum*, Linn. (*Sea Spleenwort*); fronds pinnate, pinnæ oblong obtuse inciso-serrate, the superior base rounded and subauriculated, the lower one truncated. *Engl. Bot. t.* 392. *Hook. Scot. ii. p.* 155. *Engl. Fl. v. iv. p.* 307.

In the clefts and caves of rocks on the sea-coast; not unfrequent, especially in the north.

H. 6. A. *Ruta-murária*, Linn. (*Wall-rue Spleenwort*); fronds bipinnate especially below, pinnules obovato-cuneate lobed or bluntly toothed. *Engl. Bot. t.* 150. *Hook. Scot. ii. p.* 156. *Engl. Fl. v. iv. p.* 309.

Walls and fissures of rocks, frequent.

H. 7. A. *lanceolátum*, Huds. (*green lanceolate Spleenwort*); fronds lanceolate and bipinnate, pinnules obovate attenuated at the base deeply and sharply serrated, those of the lower pinnæ somewhat lobed, principal rachis not winged, sori at length confluent. *Engl. Bot. t.* 240. *Engl. Fl. v. iv. p.* 311.

Rocks, very rare; in the south of England. Jersey, Cornwall, Tonbridge, on Adderbury Church, Oxfordshire.—Very nearly allied to the following, but distinct by the above-mentioned characters.

H. 8. A. *Adiantum-nígrum*, Linn. (*black-stalked Spleenwort*); fronds ovate or deltoid below tripinnate, pinnules ovato-lanceolate inciso-pinnatifid toothed, principal rachis winged, sori at length confluent. *Engl. Bot. t.* 1950. *Hook. Scot. ii. p.* 156. *Engl. Fl. v. iv. p.* 310.

Banks and fissures of rocks, common.—*Stipes* purplish-black, as in the preceding species.

H. 9. A. *Filix-fǽmina*, Bernh. (*female Spleenwort*); fronds broadly lanceolate bipinnate, pinnules linear-oblong acute often drooping inciso-serrate, serratures bi-tridentate acute, lower one at the upper margin large ear-like, sori oblong at length arched at the base. *Athyrium Filix-fæmina, Roth.—Aspidium Filix-fæmina, Sw.—Engl. Bot. t.* 1459. (*not good*). *Hook. Scot. ii. p.* 155. *Engl. Fl. v. iv. p.* 295.—*Polypodium Filix-fæmina, Linn.*

β. smaller. *Aspidium irriguum, Engl. Bot. t.* 2199. *Engl. Fl. v. iv. p.* 296.

Moist shady places, abundant.—I have seen Sir J. E. Smith's specimen of *A. irriguum*, which I fear can only be considered a dwarf state of *A. Filix fæmina.*

10. A. *fontánum*, Br. (*smooth Rock Spleenwort*); fronds linear-lanceolate bipinnate, pinnules obovato-cuneate (small) with few large deep and sharp teeth, principal and partial rachis winged throughout. *Engl. Fl. v. iv. p.* 312.—*Aspidium fontanum, Sw. Willd.*—*Engl. Bot. t.* 2024.—*A. Halleri, Willd.*—*Polypodium fontanum, Willd.*

Walls and rocks, very rare. On Amersham or Agmondesham church, Bucks; *Mr. Bradney.* Stony-place Wybourn, Westmoreland, or Wiborn, Cumberland; *Mr. Hudson.* A very distinct and handsome little species.

7. Scolopéndrium. *Sm.* Hart's Tongue.

Sori linear, transverse, on lateral nerves. *Involucre* double, occupying both sides of the sorus, superficial, opening, as it were, by a longitudinal suture.—Named from the lines of fructification resembling the feet of a *Scolopendra.*

H. 1. S. *vulgáre*, Sym. (*common Hart's-tongue*); fronds simple oblongo-ligulate acute heart-shaped at the base, stipes scaly. *Engl. Bot. t.* 1150. *Hook. Scot. ii. p.* 156. *Engl. Fl. v. iv. p.* 314.—*S. officinarum, Sw.*—*Willd.*—*Asplenium Scolopendrium, Linn.*

Shady banks, rocky or stony places, in cold and damp situations.—In the moat at Kenilworth Castle, I have gathered this handsome fern more than 2 feet long.

8. Ptéris. *Linn.* Brake.

Sori continuous, linear, marginal. *Involucre* formed of the inflexed margin of the frond, frequently dilated into a membrane, opening internally. Name; πτερις, in Greek, a *Fern:* from πτερυξ, a *plume* or *feather.*

1. P. *aquilína*, Linn. (*common Brake*); fronds tripartite, branches bipinnate, pinnules linear-lanceolate, superior undivided, inferior pinnatifid, the segments oblong obtuse. *Engl. Bot. t.* 1679. *Hook. Scot. ii. p.* 156. *Engl. Fl. v. iv. p.* 318.

Woods, heaths and rough stony or sandy soils; abundant. This is the favourite haunt of the Deer;

> "The wild Buck bells from ferny *brake.*"

It is used as litter for cattle and for thatching houses. The ashes are useful in the manufactory of soap and glass. Its astringent quality has recommended it for dressing and preparing Kid and Chamois leather, and the country people in Scotland employ it medicinally as a vermifuge. The *Brake* is the badge of the Clan *Robertson.*

9. Cryptográmma. *Br.* Rock-brake.

Sori linear, or roundish, oblique, inserted upon the lateral nerves of the pinnule, at length confluent and thus appearing marginal. *Common Involucre* formed by the revolute margins of the pinnules, which in a young state meet at the back. *Partial* none.—Name; ϰϱυπτος, *concealed,* and γϱαμμη, a *line;* from the concealed lines of capsules.

H. 1. C. *críspa,* Br. (*curled Rock-brake*); sterile fronds bipinnate, pinnules bi-tripinnatifid, segments linear oblong often bidentate at the extremity, fertile fronds bipinnate, tripinnate below, pinnules linear-oblong rather obtuse entire narrow at the base. *Pteris crispa, Linn.—Engl. Bot. t.* 1160. *Hook. Scot. ii. p.* 156. *Engl. Fl. v. iv. p.* 319.—*Allosorus, Kaulf.—Phorolobus, Desv.*

Among loose stones in mountainous countries in the north: more abundant in the north-west of England than in Scotland.—A very elegant Fern, properly distinguished by Mr. Brown from *Pteris,* differing as it does in habit, even more than in generic character.

10. Bléchnum. *Linn.* Hard-Fern.

Sori linear, longitudinal, contiguous, parallel on each side of the rib. *Involucre* superficial, continuous, opening interiorly.—Name, βληϰνον, another Greek name for a *Fern.*

1. B. *boreále,* Sw. (*northern Hard-Fern*); sterile fronds pectinato-pinnatifid the segments lanceolate rather obtuse, fertile fronds pinnate, pinnæ linear acuminate. *Engl. Bot. t.* 1159. *Hook. Scot. ii. p.* 157. *Engl. Fl. v. iv. p.* 316.

Woods and heaths, abundant; especially in a poor light soil.

11. Adiántum. *Linn.* Maidenhair.

Sori oblong or roundish. *Involucres* membranaceous, arising from distinct portions of the margin of the frond, turned in, opening interiorly.—Name, αδιαντος, that which is of a *dry nature.*

H. 1. A *Capillus-Véneris,* Linn. (*True Maidenhair*); frond bipinnate, pinnules thin membranaceous obovato-cuneate inciso-sublobate, segments of the fertile pinnules terminated by a linear-oblong sorus, sterile ones serrated. *Engl. Bot. t.* 320. *Hook. Scot. i. p.* 157. *Engl. Fl. v. iv. p.* 321.

Moist rocks and walls, especially near the sea; rare. Barry island and Port Kirig, Glamorgan, *Mr. Lhwyd.* South isles of Arran, Galloway, Ireland; *Mr. Stonestreet* and *Mr. J. T. Mackay.* By the Carron, Kincardineshire, *Prof. Beattie.*—A most delicate and graceful Fern, very abundant in the south of Europe, where I have seen it lining the inside of wells with a tapestry of the tenderest green.

12. Trichómanes. *Linn.* Bristle-fern.

Sori marginal. *Capsules* upon an elongated receptacle, within a cylindrical or suburceolate, monophyllous *involucre* which is of the same texture as the frond, opening outwards.—Name; ϑϱιξ, τϱιχος, *a hair,* and μανια, *excess:* the numerous stems resembling hairs.

1. T. *brevisétum,* Br. (*short-styled Bristle-fern*); fronds 3-4-pinnatifid glabrous, segments linear entire or bifid obtuse, involu-

cres solitary in the axils of the upper segments margined cylindrical, the mouth scarcely 2-lipped shorter than the receptacle. *Engl. Fl. v. iv. p.* 325.—*T. europæum, Sm. in Rees' Cycl.*—*T. alatum, Hook. in Fl. Lond. N. S. t.* 53. (*not Willd.*)—*T. pyxidiferum, Huds.*—*Hymenophyllum alatum, Engl. Bot. t.* 1417.—*Hymenophyllum Tunbridgense, β. Sm. Fl. Brit.*

Wet rocks in mountainous countries, rare. Near Bingley, Yorkshire, *Dr. Richardson.* Powers court, and near the Cascade at the foot of Turk mountain, Killarney, Ireland; *Mr. J. T. Mackay.* Hermitage Glen, Wicklow; *J. Nuttall, Esq.*—This rare and beautiful *Fern*, as well as the species of the following Genus, have a habit very different from the rest of our Ferns and belong to a groupe which abounds in the tropics. Their *fronds* are membranous and elegantly reticulated; and their *capsules* have jointed *rings* which surround them completely transversely, and they are fixed by the centre of their underside to the *receptacle.*

13. HYMENOPHÝLLUM. *Sm.* Filmy-fern.

Sori marginal. *Capsules* upon an elongated receptacle, within a two valved *involucre* which is of the same texture as the frond, opening outwards.—Name; ὑμην a *membrane*, and φυλλον, a *leaf*, an admirably characteristic appellation.

1. H. *Tunbridgénse*, Sm. (*Tunbridge Filmy-fern*); fronds tender pinnate, pinnæ distichous vertical pinnatifid the segments linear undivided or bifid and as well as the axillary solitary suborbicular compressed involucre spinuloso-serrate, rachis strongly winged. *Engl. Bot. t.* 162. *Hook. in Fl. Lond. N. S. t.* 71. *Hook. Scot. ii. p.* 158. *Engl. Fl. v. iv. p.* 327.

Moist rocks among moss, in mountainous countries. First found at Tonbridge. Abundant in the north-west of England and in Wales and many parts of Ireland. Rare in Scotland. Rocks in the Bull wood, Dunoon, banks of the Clyde.—Habit tender and delicate. *Pinnæ* pointing in two opposite directions, flat and vertical, on the same plane with the winged *rachis. Involucres* nearly orbicular, slightly swollen at the base, where the cluster of *capsules* is lodged, the rest compressed, especially at the margin of the valves.—When dry, there is a degree of elasticity in the plant.

H. 2. H. *Wilsóni*, (*Scottish Filmy-fern*); fronds rigid pinnate, pinnæ recurved subunilateral pinnatifid the segments linear undivided or bifid spinuloso-serrate, involucres axillary solitary ovate inflated quite entire, rachis only slightly margined towards the extremity.

Wet rocks. Abundant in the Highlands of Scotland and in many parts of Ireland. About Killarney, *Mr. W. Wilson.*—More rigid, yet more loosely cellular and coarsely reticulated than the last: quite different in its mode of growth: for all the *pinnæ* have a great degree of curvature upwards, and to one side; so that, upon looking at the growing plant, you see the ends of the segments: the *involucre* is totally different, larger, browner, of a more rigid texture, truly ovate, each valve remarkably convex for its whole length, the edges of the valves only being applied to each other, and they are quite entire.—English Botanists, who had only seen the *Hymenophyllum* of their own country, have often been struck with the dissimilar appearance of our more usual Scottish kind, as met with on its native rocks; but no one, I believe, was aware of their real differences, till Mr. W. Wilson found them both growing at the Lakes of Killarney, and distinguished them specifically.

DIV. II. *Capsules without an elastic jointed ring, spiked or racemose, regularly 2-valved* (Osmundaceæ *and* Ophioglosseæ. *Br.*)

14. OSMÚNDA. *Linn.* Osmund-royal, or Flowering-Fern.

Capsules subglobose, pedicellate, clustered, striated, half 2-valved. *Involucre* none.—Name, probably given, as Sir J. E. Smith suggests, in honour of some person. *Osmund,* in Saxon, is said to mean *domestic peace.*

H. 1. O. *regális,* Linn. (*common Osmund-royal*); fronds bipinnate, pinnules lanceolate nearly entire the lower base somewhat auricled, the inferior ones opposite, fertile panicle bipinnate occupying the extremity of the frond. *Engl. Bot. t.* 209. *Hook. in Fl. Lond. N. S. t.* 150. *Hook. Scot. ii. p.* 158. *Engl. Fl. v. iv. p.* 327.

Boggy places, wet margins of woods very frequent in the north-west of Scotland, and South of Ireland, *Mr. J. T. Mackay.*—The noblest and most striking of our Ferns. Mr. Stewart Murray has measured a tuft of its *fronds* on the banks of the Clyde, which from the base, where they sprung from the ground, were 11½ feet high.

15. BOTRÝCHIUM. *Sw.* Moonwort.

Capsules subglobose, sessile, clustered at the margin and on one side of a pinnated rachis, one-celled, 2-valved, compressed, opening transversely. *Involucre* none.—Name; βοτρυς, *a bunch of grapes;* from the appearance of the branched clusters of capsules.

H. 1. B. *Lunária,* Sw. (*common Moonwort*); frond pinnated solitary, pinnæ lunate or subflabelliform crenate. *Hook. in Fl. Lond. N. S. t.* 66. *Hook. Scot. ii. p.* 158. *Engl. Fl. v. iv. p.* 328.—*Osmunda Lunaria, Linn.*—*Engl. Bot. t.* 318.

Dry mountain pastures.—Varieties of this are found, with more than one *frond* upon a stalk and with the *pinnules* laciniated and even pinnatifid. Captain Carmichael communicated specimens to me, which bore *capsules* on the margins of their lower pinnules. In Cheshire Mr. W. Wilson finds it with 3 stalks of fructifications.

16. OPHIOGLÓSSUM. *Linn.* Adder's tongue.

Capsules one-celled, 2-valved, opening transversely, connate, so as to form a compact two-ranked *spike.* *Involucre* none.—Name;

οφις, οφιος, a *serpent*, and γλωσσα, a *tongue*, which the spike of fructification somewhat resembles.

H. 1. O. *vulgátum*, Linn. (*common Adder's tongue*); spike cauline, frond ovate obtuse. *Engl. Bot. t.* 108. *Hook. in Fl. Lond. N. S. t.* 78. *Hook. Scot. ii. p.* 158. *Engl. Fl. v. iv. p.* 329.
Moist pastures and in woods.

Div. III. *Fructifications sessile, axillary, or bracteated and spiked. Capsules without a ring,* 2—3 *valved.* (Lycopodineæ. *Sw.*)

17. Lycopódium. *Linn.* Club-moss.

Capsules 1-celled; some 2-valved, including a fine powdery substance, others 3-valved, containing a few large *grains* or *seeds.* —Name; λυκος, a *wolf,* and πους, ποδος, a *foot,* which the branches of some species are supposed to resemble.

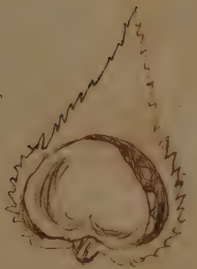
H. 1. L. *clavátum*, Linn. (*common Club-moss*); spikes in pairs cylindrical stalked, their scales ovate acuminate eroso-dentate, stem creeping, branches ascending, leaves scattered incurved and hair-pointed. *Engl. Bot. t.* 224. *Hook. Scot. ii. p.* 159. *Engl. Fl. v. iv. p.* 331.
Heathy pastures, especially in mountainous countries.—The *seeds* are used to produce artificial lightning on the stage; and the Poles make a decoction of the plant to cure persons afflicted with that terrible disease, the *plica polonica.* *Stems* many feet long.

2. L. *annótinum*, Linn. (*interrupted Club-moss*); spikes oblongo-cylindrical solitary sessile terminal, stem creeping, branches ascending dichotomous, branchlets simple, leaves in about 5 rows linear-lanceolate mucronate serrulate patent. *Engl. Bot. t.* 1727. *Hook. Scot. ii. p.* 159. *Engl. Fl. v. iv. p.* 331.
Stony mountains of Caernarvonshire (*Mr. Lhwyd*), and in the Highlands of Scotland; but by no means general. Not unfrequent on the Cairngorum range.

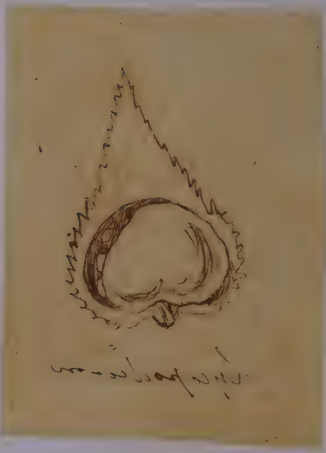
H. 3. L. *inundátum*, Linn. (*Marsh Club-moss*); spike terminal sessile leafy solitary, stem (short) creeping, branches simple few, leaves linear scattered acute curved upwards. *Engl. Bot. t.* 239. *Hook. Scot. ii. p.* 159. *Engl. Fl. v. iv. p.* 232.
Moist heathy places; but not very common.

H. 4. L. *selaginoídes*, Linn. (*lesser alpine Club-moss*); spikes terminal solitary sessile, stem creeping, branches few ascending simple, leaves scattered lanceolate subpatent ciliato-denticulate. *Engl. Bot. t.* 1148. *Hook. Scot. ii. p.* 159. *Engl. Fl. v. iv. p.* 332.
Boggy and springy spots, by the sides of mountains in the north; not unfrequent.

H. 5. L. *alpínum*, Linn. (*Savin-leaved Club-moss;* spikes terminal solitary sessile short cylindrical, stems prostrate, branches dichoto-



Lycopodium



mous and fascicled, leaves in 4 rows oblong convex acute appressed. *Engl. Bot. t.* 234. *Hook. Scot. ii. p.* 159. *Engl. Fl. v. iv. p.* 335.

On the more elevated mountains of the north, frequent.—This plant is the badge of the Highland Clan *Macrae*. It is used in many counties to dye woollen cloth of a yellow colour.

H. 6. L. *Selágo*, Linn. (*Fir Club-moss*); capsules in the axils of the common leaves (not spiked), stems dichotomously branched erect fastigiate, leaves in about 8 rows linear-lanceolate acuminate entire imbricated rigid. *Engl. Bot. t.* 233. *Hook. Scot. ii. p.* 159. *Engl. Fl. v. iv. p.* 333.

Heathy stony soils, most abundant in mountainous countries.—Used in the Highlands, instead of alum, to fix colours in dyeing. The Highlanders employ it as an emetic or cathartic, but it operates violently. The Swedes use it to destroy lice on swine and other animals.

Div. IV. *Capsules without a ring, within involucres that are near the root of the plant. Aquatics.* (Marsileaceæ. *Br.*)

18. Isoëtes. *Linn.* Quill-wort.

Involucres formed by the swollen base of the leaves, one-celled. *Seeds* angular, inserted upon many filiform receptacles.—Name; ισος, *equal*, and ετος, the *year*, or *ever-green*.

1. L. *lacústris*, Linn. (*Europæan Quill-wort*); leaves subulate bluntly 4 angular of 4 longitudinal internally jointed tubes. *Engl. Bot. t.* 1084. *Hook. Scot. ii. p.* 160. *Hook. in Fl. Lond. N. S. t.* 131. *Engl. Fl. v. iv. p.* 243.

Bottoms of lakes in the north of England, Wales and Scotland.—A very singular aquatic: its *fructification* being entirely concealed at the base of the cellular, subulate *leaves*.

[illegible] [illegible] 185[illegible]

19. PiluLária. *Linn.* Pill-wort.

Involucres solitary, nearly sessile, globose, coriaceous, 4-celled: each *cell* containing 2 different kinds of bodies; (*anthers?* and *pistils?*).—Name; *pilula, a little pill*, which its fructifications resemble.

H. 1. P. *globulífera*, Linn. (*creeping Pill-wort*); *Engl. Bot. t.* 521. *Hook. in Fl. Lond. N. S. t.* 83. *Hook. Scot. ii. p.* 160. *Engl. Fl. v. iv. p.* 342.

Margins of lakes and pools, and in places that are partially overflowed. —*Stems* creeping, long and entangled. *Leaves* setaceous, erect, 2 or 3 from one point, 4—5 inches long. *Involucres* at the base of the *leaves*, about the size of small peas, brown, scaly on the outside.

Div. V. *Fructifications terminal, in spikes or catkins, consisting of peltate, polygonous scales, on the under-side of which are from 4—7 involucres, which open longitudinally and contain numerous globose bodies, (capsules?) enfolded by 4 filaments, clubbed*

at their extremities, (which some take for stamens).—Stems rigid, leafless, jointed, striated, the articulations sheathed at the base; branches, if any, mostly whorled, and as many will be found as there are striæ upon the stem and teeth to the sheath, if the teeth do not continue more or less combined. (Equisetaceæ. *Rich.*)

+ 20. EQUISÉTUM. *Linn.* Horsetail.

Character of the genus the same as that of the Division.—Name; *Equus*, a *horse*, and *seta*, a *hair*, or *bristle;* meaning *horsetail.*

* *Fertile stems simple, succulent, brownish, appearing before the sterile ones and soon dying away, when the latter alone remain, through the summer, with whorled branches.*

-✝ Telmateia of Babington

H. 1. E. *fluviátile*, Linn. (*great Water Horse-tail*)*;* sterile stems with very numerous (about 30,) nearly erect whorled simple branches, stem cylindrical smoothish, sheaths with close small subulate teeth, fertile stems (short) without branches, clothed with ample loose sheaths having many subulate teeth. *Engl. Bot. t.* 2022. *Hook. Scot. ii. p.* 161. *Engl. Fl. v. iv. p.* 337.

Muddy lakes, sides of rivers and pools, frequent. *Fr.* Apr.—The largest of all our species, its *sterile stems* or *fronds* being 3—4 feet high, or even 6-7-

2. E. *Drummóndii*, (*blunt-topped Horse-tail*)*;* frond very obtuse at the extremity, sterile stem especially upwards scabrous with prominent points with about 20 striæ, and as many appressed teeth to the sheath, and as many whorled simple patent branches, sterile stem without branches its sheaths approximate appressed with subulate teeth.

Scotland; banks of the Isla and Esk, in Forfarshire, extending up the vallies to their sources; *Mr. T. Drummond. Fr.* Apr.—Allied to the following species, but unquestionably distinct. Its colour is greener, and less glaucous, its *stems* rougher, with closely set, raised points, its angles and *branches* much more numerous, and the whole *barren frond* is singularly blunt (in its outline) at the extremity, by which it may at once be known from *E. arvense.* The *sheaths*, though paler at the base, have blacker and more prominent ribs upwards, and they are so close as to imbricate each other: their *teeth* also are more numerous when they separate into their proper number. I am not aware that this has been found in any other country, or part of Britain, than that now mentioned.

H, 3. E. *arvénse*, Linn. (*Corn Horse-tail*)*;* frond attenuated upwards, sterile stem slightly scabrous with about 12 striæ, as many lanceolato-subulate teeth to the sheath, and as many whorled simple erecto-patent branches, ~~sterile~~ stem without branches, its sheaths remote loose. *Engl. Bot. t.* 2020. *Hook. Scot. ii. p.* 161. *Engl. Fl. v. iv. p.* 337.

Corn-fields and road sides, frequent. *Fr.* Apr., afterwards the *sterile stems* appear.

+. In Brazil the Equiseti attain to 15 feet, 3 inches round.

✝ increases the milk of cows - a favorite food of water-rats.

** *Fertile stems at length throwing out whorled branches, or bearing the fructifications at the same time with the whorled branches.*

H. 4. E. *sylváticum*, Linn. (*branched Wood Horse-tail*); sterile and fertile stems with about 12 striæ and as many compound whorled deflexed branches, sheaths lax with about 6 or 12 long membranaceous obtuse teeth. *Engl. Bot. t.* 1874. *Hook. Scot. ii. p.* 161. *Engl. Fl. v. iv. p.* 336.

Moist woods, hedge-banks; abundant in the north. *Fr.* Apr. May. —A graceful species, less rigid and more herbaceous than any of the following. *Sterile plants* pyramidal in their *catkin; fertile ones* abrupt at the top, especially after the fructification has passed away.

H. 5. E. *limósum*, Linn. (*smooth naked Horse-tail*); stem smooth striated, striæ about 16—18, with as many short rigid distinct teeth to the sheaths and as many nearly erect simple often abortive branches, catkin terminal upon the stem. *Engl. Bot. t.* 929. *Hook. Scot. ii. p.* 161. *Engl. Fl. v. iv. p.* 339.

Marshy watery places and ditches, frequent. *Fr.* June, July.—Next in size to *E. fluviatile:* agreeing, too, somewhat in habit; but with fewer angles and *teeth* and fewer *branches* in a whorl; and these latter often short and imperfect, or wanting; and differing, by the *catkins* being upon stems that are similar to the barren ones.

H. 6. E. *palústre*, Linn. (*Marsh Horse-tail*); stem furrowed roughish with 7 or 8 angles, as many teeth to the sheaths and as many whorled simple branches gradually shorter upwards (sometimes abortive), catkin terminal on the stem. *Engl. Bot. t.* 2021. *Hook. Scot. ii. p.* 161. *Engl. Fl. v. iv. p.* 339.

β. *alpina*, much smaller, with 4—5 angles and teeth to the sheaths, upper branches abortive.

Boggy soils, frequent. β. Boggy places near springs, on the higher parts of the Breadalbane mountains. *Fr.* June, July.

*** *Stems branched only at the base: fructifications terminal.*

H. +7. E. *hyemále*, Linn. (*rough Horse-tail*); stem throwing up simple branches only from the base scabrous striated and rough, striæ and very small obtuse teeth often deciduous about 18, sheaths white (black) at the extremity, catkin terminal. *Engl. Bot. t.* 915. *Hook. Scot. ii. p.* 161. *Engl. Fl. v. iv. p.* 239.

Boggy woods; principally in the middle and north of England, and in Scotland, and Ireland. *Fr.* July, Aug.—Most of the *Horse-tails* are more or less rough to the touch and their cuticle abounds in *silex*, or flinty earth; so that they are admirably suited for the polishing of hard woods, ivory, brass, &c. This species, *E. hyemale*, is by far the most preferable kind, and is imported largely from Holland for such purposes, under the name of *Dutch Rushes.* In Northumberland, Lightfoot tells us that the dairy-maids employ it to scour and clean their milk-pails.

H. 8. E. *variegátum*, Schleich. (*variegated rough Horsetail*); stems

+ The epidermis almost entirely silex - Parkinson Vol. I. 328
Cells incrusted with silex seen in a microscope.

filiform rough branched only at the base furrowed, with 4—8 angles and as many white membranaceous lanceolate teeth, black at the base, catkin terminal. *Engl. Bot. t.* 1987. *Hook. Scot. ii. p.* 161. *Engl. Fl. v. iv. p.* 340.

Sandy sea-shores. Sands of Barrie, *Mr. G. Don.* Portmarnock sands, Ireland, *Dr. Taylor.* Southport, Lancashire; and Bootle, near Liverpool; and at Mucruss, Ireland, growing in water, *Mr. W. Wilson.* *Fr.* July, Aug.—The smallest of our species, usually decumbent, 6—8 inches long, slender. At Mucruss, Mr. Wilson finds this plant growing in water and upright to thrice that size, with a *stem* smoother and more polished in the furrows, and the *sheaths* not so conspicuously or so constantly furnished with acuminated *teeth* or summits as is usual in the ordinary state of the plant.

END OF THE FERNS.

APPENDIX.—NATURAL ORDERS.

The Appendix was destined to contain remarks upon some of the most important *Natural Orders* of British Plants: but this little volume having already attained a greater length than was originally proposed, these notices must be very brief indeed.—According to the method in question, the vegetable kingdom is divided into 3 primary groupes or *Classes.* 1. Acotyledones, 2. Monocotyledones, 3. Dicotyledones.

CLASS I. ACOTYLEDONES. *Juss.* (Cryptogamia. *Linn.*) No evident *flowers.* *Seeds* or organs of reproduction without *Embryo*, consequently *acotyledonous.—Vegetation;* in all, except the Ferns, the structure seems to be entirely cellular. The *Ferns* alone have tubular vessels among the cells, and hence approach the 2d Class. The Orders not being very numerous in this Class, they follow without any further subdivision.

Ord. I. FUNGI.

The lowest in the scale of vegetables, yet very variable in appearance; growing upon the ground, or parasitic on other vegetable substances; rarely, if ever, aquatic and scarcely ever green: filamentous, gelatinous, corky, coriaceous, fleshy or membranaceous. In the larger sense of the word, the whole plant may be considered as fructification, since distinct from it, there is no true stem, there are no branches, no leaves. After being once dried, they do not revive by the application of moisture like the greater number of plants in this Class; and generally speaking, they are of very short duration, soon decaying, and frequently becoming putrid in decay.

Div. I. *Seeds internal.* Sphæria, &c.—Uredo. Of this genus there are two destructive species: 1. *U. Segetum;* a black dust, residing within the fruit or glumes of grasses, especially of *Wheat, Barley*, and *Oats;* thus destroying the kernel and doing vast injury to our crops, converting the part affected into a black powder, and known by the name of *brand, dust-brand, smut, burnt-corn.* This kind has no particular scent.—2. *U. Caries, DC;* a brownish black dust, consisting of larger grains than the last, and filling the kernel itself of wheat, &c. with a fetid greasy powder. Far more injurious than the last, and not externally conspicuous, but causing the seed to swell, and thus to look diseased. In thrashing, the breaking of these grains affects the whole mass. This is known to farmers, as *balls, bladder-* or *pepper-brand, stinking-brand.* Puccinia: P. *graminis, Pers.* forming long blackish-brown parallel lines on the stem and leaves of the Grass-tribe. It constitutes the *blight, mildew*, and *rust* in corn. In the same groupe of Fungi are found the *Mucors*, or mould of cheese, &c. the *Tubers* or *Truffles*, and the curious genera of Geastrum and Phallus.

Div. II. *Fleshy Fungi, bearing seeds externally.* Amanita.—A. *muscaria, Pers.;* pileus orange-red or brown, at length nearly plane, the warts, gills and stipes white, stipes annulate.—Frequent in woods, where it is conspicuous by its bright colour. Said to be poisonous.—**Agaricus.**—*A. campestris*, the true *Mushroom;* distinguished, by the purplish-brown colour of its gills from many other species that are esteemed at our tables, and many that are known to be poisonous.—**Merulius** *cantharellus* is abundantly eaten upon the continent, as well as in England. M. *lachrymans* produces the dry-rot in timber. **Boletus** *fomentarius* it is, which constitutes *Amadou*, or *German tinder.* **Morchella** *esculenta* is the *Morell.* Several species of **Rhizomorpha** insinuate themselves between the bark and wood of trees, and hasten the decay of timber.

Ord. II. LICHENES.

Thallus (*or frond*) polymorphous, without root, perennial, abounding in excessively minute bodies for the purpose of propagation, either imbedded in the substance or scattered upon its surface, or included in peculiar organs, which are considered the *fruit* or *apothecia.* The *Lichens* have a closer affinity to the Fungi than to any other order. Sometimes they are formed of a simple, pulverulent crust or *frond;* sometimes they are membranous, coriaceous, gelatinous, lobed and variously branched, at all times destitute of leaves. They present various colours, not unfrequently tending to green. In this extensive Order we have many useful and curious plants. The species of the genus **Gyrophora** constitute the *Tripe de Roche*, of the Canadian Hunters. The genus **Graphis**, as its name implies, not inaptly resembles written characters in its fructification. **Lecanora** yields the *Perelle*, (L. *Perellus*) of the French, and the *Cudbear*, L. *tartarea;* **Roccella**, the *Archil* (R. *tinctoria*), so important to the Dyer. **Parmelia** *omphalodes*, and P. *saxatilis* are used for the same purpose by the peasantry of Scotland. In **Cenomyce**, we have the *Rein Deer-moss*, as it is erroneously called, (C. *rangiferina*), and in **Cetraria**, the *Iceland-moss*, (C. *islandica.*)

Ord. III. ALGÆ.

Vegetables, for the most part, aquatic, destitute of roots, or furnished only with a fibrous or scutate base, for the purpose of attachment, not of nourishment, whose *fronds* are either gelatinous, filamentose or coriaceous, having, for fructification, *seeds* or *sporules*, either imbedded in tubercles, or processes arising from the frond, or immersed or more or less scattered on the surface. Many of them float in the water. They are subpellucid, often beautifully cellular, their colour frequently green, brownish, bright-red or pink. After having been kept dry for a considerable length of time, they will revive by immersion in water: but that portion of the plant only imbibes the fluid which is immersed in it.

Div. I. **Tremellineæ**, (*gelatinous Algæ*)*;* to which belongs the curious *Red Snow* (**Palmella** *nivalis*) of our arctic navigators, and which has been found in Scotland and the north of England.

Div. II. **Confervoideæ**, (*distinctly jointed Algæ.*) Here belong the extensive genus **Conferva**, the singular **Oscillatoriæ**, which are found in fresh water, and many others; such as **Ceramium**, **Polysiphonia**, &c. peculiar to the sea.

Div. III. **Ulvoideæ**. (*thin and membranous Algæ.*) These include the beautiful **Zonaria** *pavonia* and the genus **Ulva**; of which two or three species are eaten and known by the name of *Laver.*

Div. IV. Fucoideæ. This division comprises the rest of the *Sea-weeds*, as they are commonly called; such as Fucus *natans*, so abundant in some seas as to impede the progress of vessels: F. *nodosus*, F. *vesiculosus*, F. *serratus*, and F. *loreus* of all which kelp is made: Laminaria *esculenta* and *saccharina*, frequently eaten upon our northern shores or in other countries: the genera Delesseria, Sphærococcus, Chondria, and Halymenia, which exhibit the most beautiful red and rose tints. In the latter genus are found H. *edulis* (*pepper Dulse*) and H. *palmata* (*true Dulse*).—Many, if not all the Fuci, contain iodine, in a state of hydriodate of Potash or of Soda.

Ord. IV. CHARACEÆ.

Fructification of 2 kinds. *Capsules?* axillary, solitary, sessile, oval, spirally twisted, invested with a pellucid membrane and crowned with 5 lobes, containing very minute *seeds;* and *globules* of a reddish or orange colour, surrounded by a pellucid covering, at length opening into 3 or 4 valves, and containing a mass of very minute filaments.—Aquatic plants, with pellucid, filiform stems, which are sometimes coated with a calcareous crust, and whorled branches. The *fruit* of this genus is often found fossilized in chalk, and known under the name of *Gyrogonites.*—This Order contains the genus Chara, which Sir J. E. Smith places in the Class *Monandria* of the artificial arrangement.

Ord. V. HEPATICÆ.

Fructification mostly of 2 kinds; very minute, rounded, reticulated bodies, often called *anthers;* and *capsules*, in an early stage covered with a *calyptra*, and surrounded by a *perianth*, at length bursting the *calyptra* irregularly and opening from the extremity into 2 or 4 equal valves (without an *operculum*), one-celled, containing numerous *seeds* and spirally-twisted filaments. *Minute plants*, frondose or foliose; mostly loosely cellular, reviving, when dried, by the application of moisture. In this Order, we have the extensive genus, Jungermannia, and the highly curious one, Marchantia.

Ord. VI. MUSCI. Mosses.

Fructification of 2 kinds; *anthers* so called, concealed among leaves, and *capsules*, in an early stage, covered with a *calyptra*, which bursts transversely and regularly at the base, and rises up with the mostly pedunculated and operculated *capsule*. The *operculum*, or *lid*, deciduous in most instances. Mouth of the *capsule* naked or furnished with a single or double *fringe* or *peristome;* containing *seeds*, surrounding a *columella*, enclosed in a seminal bag, destitute of spiral filaments. *Plants* of small size, of a more or less compactly cellular structure, readily reviving by the application of moisture after being dry, bearing *leaves* which are very rarely, indeed, divided, often nerved, entire or toothed and serrated at the margin.

Div. I. *Destitute of Peristome.* Andræa, Gymnostomum, &c.

Div. II. *Peristome single, of* 4, 8, 16, 32, *or* 64 *teeth.*—Tetraphis, Splachnum, Polytrichum, Dicranum, &c.

Div. III. *Peristome double.*—Funaria, Orthotrichum, Hypnum, Bryum, &c.

Ord. VII. FILICES, see p. 441.

CLASS II. MONOCOTYLEDONES. *Juss.*

Embryo with 1 *cotyledon* or seed-lobe, which contains the *plumule;* the opposite extremity including the *radicles.* *Stems* formed of cells, and tubular vessels, which are irregularly scattered, with no distinction of bark, wood, and pith; the oldest formation most external, the centre the softest. *Leaves* alternate, often sheathing, generally with parallel nerves. *Flowers* evident; the parts of which they are composed mostly arranged in a ternary manner: the *perianth* very frequently single.

DIV. I. *Perianth inferior.* ORD. I. AROIDEÆ (often poisonous, yet their roots afford an abundant fecula, used as food). Arum, Acorus.—II. PISTIACEÆ. Lemna.—III. TYPHACEÆ. Typha, Sparganium.—IV. ALISMACEÆ. Alisma, Actinocarpus, Sagittaria.—SUBORD. FLUVIALES. Potamogeton, Zostera, Ruppia, Zannichellia.—V. CYPERACEÆ. Cladium, Cyperus, &c. p. 18. Elyna, Carex.—VI. GRAMINEÆ. (*Glume* (calyx) 1- 2- or many-flowered, mostly of two valves, rarely of 1, or wanting. *Perianth* (*corolla* L.) glumaceous, 1-2-valved. *Stam.* hypogynous. *Anthers* versatile. *Ovary* superior, with 1 ovule. *Styles* 2, rarely 1 or 3. *Stigmas* plumose. *Fruit*, a *caryopsis* or *utriculus.* *Embryo* scutelliform, lateral, on the outside of the base of a farinaceous copious *albumen.* *Plumule* naked. *Stems* fistulose, generally simple and herbaceous, jointed, sometimes branched, rarely shrubby. *Leaves*, one to each joint, with a *sheath*, slit longitudinally on one side, having a membranous appendage (*ligule*) at its summit. *Flowers* small, panicled or spiked. *Br.*—A most natural order, and one of the highest importance in the whole vegetable kingdom, comprehending *the true Grasses.* Anthoxanthum, Nardus, Alopecurus, &c. p. 26.—VII. RESTIACEÆ. Eriocaulon.—VIII. JUNCI. Juncus, Luzula, Narthecium.—IX. JUNCAGINEÆ. Triglochin, Scheuchzeria.—X. BUTOMEÆ. Butomus.—XI. MELANTHACEÆ. (The *Colchicum* is said to form a powerful ingredient in the *Eau médicinale.*) Colchicum, Tofieldia.—XII. LILIACEÆ. (This order contains many important plants. The roots of some, as *onions*, are esculent, and most of their bulbs abound in an acrid or bitter principle, whence they are used medicinally, as the *squill* of the shops. *Aloes* yield a very potent drug. *Tulip*-roots are eaten in Russia; and those of *Scilla esculenta* in great quantities in Arctic America, where they are called *Quamash.*) Allium, &c. p. 153.—XIII. SMILACEÆ. Convallaria, Ruscus, Paris.

DIV. II. *Perianth superior.*—XIV. DIOSCOREÆ. Tamus.—XV. AMARYLLIDEÆ. Narcissus, Galanthus, Leucoium.—XVI. IRIDEÆ. (the stigmas of a *Crocus* constitute *saffron.* The roots of some species of *Iris* are purgative.) Iris, Trichonema, Crocus.—XVII. HYDROCHARIDEÆ. Hydrocharis, Stratiotes.—XVIII. ORCHIDEÆ. Orchis, &c. p. 370.

CLASS III. DICOTYLEDONES.

DIV. I. *Perianth single or none.* ORD. I. CONIFERÆ. (This and the next order contain nearly all our forest-trees.) Pinus, Juniperus, Taxus.—II. AMENTACEÆ. SUBORD. 1. ULMACEÆ. Ulmus. SUBORD. 2. BETULINEÆ. Betula, Alnus. SUBORD. 3. SALICINEÆ. Salix, Populus. SUBORD. 4. CUPULIFERÆ. Fagus, Castanea, Quercus, Corylus, Carpinus.—III. URTICEÆ (yielding hemp from some *nettles* and from the genus *Cannabis;* a narcotic bitter from the *hop* and *hemp;* and esculents from the *bread-fruit* and *fig*). Urtica, Parietaria, Humulus.—IV. EUPHORBIACEÆ.

(*Anthers* and *pistils* in distinct flowers, naked, or with a free, 3-or more cleft *perianth.—Barren fl. Stam.* 1—12. *Anthers* didymous. *Fertile fl. Ovary* 1. *Styles* 2—3. *Stigmas* 2—3, bipartite or 2-lobed. *Capsule* elastically opening into 2—3, 1- or 2-seeded *cocci. Seeds* suspended. *Embryo* in the axis of a fleshy albumen. *Radicle* superior. *Cotyledons* flat. *Stems* herbaceous or woody. *Leaves* alternate, opposite, or whorled. Acrid milky vegetables, yielding food and poſson, medicine, dye, and caoutchouc or india-rubber.) Mercurialis, Euphorbia, Ruscus.—V. EMPETREÆ. Empetrum.—VI. ARISTOLOCHIÆ. Asarum, Aristolochia.—VII. ELEAGNEÆ. Hippophae.—VIII. SANTALACEÆ. Thesium.—IX. THYMELEÆ. (The inner bark of some species contains so much fibre as to constitute a *hemp* and *paper.*) Daphne.—X. POLYGONEÆ. (Seeds very farinaceous and esculent.) Polygonum, Rumex, Oxyria.—XI. CHENOPODEÆ. (All yield carbonate of *soda*, and hence *barilla. Beet-roots* afford the finest sugar that is now most extensively manufactured in France). Chenopodium, Atriplex, Beta, Salsola, Salicornia.—XII. SCLERANTHEÆ. Scleranthus.—XIII. AMARANTHACEÆ. Amaranthus.—XIV. PLANTAGINEÆ. Littorella, Plantago.

DIV. II. *Perianth double.* SECT. I. *Cor. monopetalous, hypogynous (not attached to the calyx.)*—XV. PLUMBAGINEÆ. Statice.—XVI. PRIMULACEÆ. Anagallis, Cyclamen, Lysimachia, Hottonia, Primula, Centunclus, Trientalis, Samolus, Glaux.—XVII. LENTIBULARIÆ. Utricularia, Pinguicula.—XVIII. VERBENACEÆ. Verbena.—XIX. LABIATÆ. (*Cal.* tubular. *Cor.* monopetalous, hypogynous, irregular. *Stam.* 4. mostly didynamous, 2 sometimes sterile or wanting. *Style* 1. *Stigma* 2-lobed. *Achenia* 4, enclosed in the calyx. *Seed* solitary, erect. *Embryo* erect. *Albumen* 0. *Leaves* opposite. *Stem* square. *Br.*—An extensive and eminently natural order, abounding in essential oils, camphor, and bitter extractive. Many of the individuals are therefore employed medicinally.) *Stam.* 2. Lycopus, Salvia.—*Stam.* 4, *didynamous.* Mentha, &c. p. 269. XX. SCROPHULARINEÆ. (and Melampyraceæ, Rich.) *Cal.* persistent. *Cor.* monopetalous, hypogynous, generally irregular, deciduous, with an imbricated æstivation. *Stam.* generally 4, didynamous, rarely equal, sometimes 2. *Style* 1. *Stigma* 2-lobed, rarely undivided. *Caps.* (very seldom a *Berry*) 2-celled, 2—4-valved; the *valves* entire or bifid, with a dissepiment either double, from the inflexed margins of the valves, or simple, parallel and entire, or opposite and bipartite. *Receptacle* of the seeds central, united to the dissepiment, or eventually separating. *Seeds* few or numerous. *Embryo* straight, enclosed in the axis of a fleshy albumen. *Herbs* (sometimes *shrubs*) usually with opposite leaves. *Br.* (In this Order are many powerfully medicinal plants, as the *Hedge-hyssop* (Gratiola) the *Foxglove*, &c.) Bartsia, Scrophularia, Veronica, Digitalis, &c. p. 282.—XXI. OROBANCHEÆ, *Rich.* Orobanche, Lathræa.—XXII. SOLANEÆ. (*Cal.* 5, rarely 4-partite, persistent. *Cor.* monopetalous, hypogynous, its *limb* 5-cleft, equal or somewhat unequal, deciduous, with a plicate æstivation. *Stam.* inserted into the *Cor.*, alternate with its segments and equal to them in number, 1 sometimes abortive. *Ovary* 1—2- or 4-celled, many-seeded. *Style* 1. *Stigma* obtuse, rarely lobed. *Pericarp* 1—2 or 4-celled, either a *capsule*, with a parallel double dissepiment, or a *berry*, with the receptacles united to the dissepiments. *Seeds* numerous *Embryo* included in a fleshy albumen, more or less curved, often out of the axis. *Radicle* opposite the hilum. *Herbs* or *Shrubs. Leaves* alternate, without stipules, sometimes opposite, beneath the flowers. *Br.*—Linnæus called this family *Luridi*, and fancied that their lurid appearance indicated the dangerous properties common to many of them. They are acrid and narcotic, as the *Deadly Nightshade*, the *Mandragora*, *Henbane*, *Thorn-Apple*, *Tobacco*, &c. whilst the root of one, when cooked, affords a most important article of food, *Potatoes;* and the fruits of the *Love-Apple*, *Winter-cherry*, and *Capsicum* are condiments.) We have, in this country, only Datura, Hyoscyamus, Solanum, Atropa, and Verbascum.—XXIII. BORAGINEÆ. (*Cal.* 5, rarely 4-partite) persistent. *Cor.* hypogynous, monopetalous, most frequently regular, 5-cleft, sometimes 4-cleft, with imbricated æstivation. *Stam.* inserted into the *cor.*, alternate with its segments, and equal to them in number, rarely more. *Ovary* 4-partite, 4-seeded, or simple, 2—4-celled. *Ovules* definite, pendulous. *Achenia* 4, apart or united at the base, or a 4-celled *drupe*, or a *berry* with 2—4 nuts. *Seeds* without, or nearly without *albumen*. *Radicle* superior. *Herbs* or *Shrubs*. *Leaves* alternate, without stipules, usually scabrous. *Flowers* frequently in 1-sided, more or less compound spikes or racemes. The *Boragineæ* are mild, emollient and mucilaginous, sometimes slightly bitter and narcotic. The roots of several species afford a red dye. Echium, &c. p. 79.—XXIV. CONVOLVULACEÆ, (which are acrid and purgative, yielding *Scammony*, *Jalap*, &c. nevertheless the roots of the *Batatas* are abundantly eaten in the Tropics). Convolvulus, Cuscuta.—XXV. POLEMONIACEÆ. Polemonium.—XXVI. GENTIANEÆ, (containing the most powerful of all vegetable bitters). Exacum, Erythræa, Gentiana, Swertia, Chlora, Menyanthes, Villarsia. —XXVII. APOCYNEÆ, (abounding in a poisonous milky juice, to which belong the *Strychnos Nux Vomica*, the famous *Upas*, the *Tanghin* or *Poison-tree* of Madagascar, *Asclepias vomitoria*, &c. The *Urceola elastica* produces Caoutchouc.) Vinca.—XXVIII. OLEINEÆ. Fraxinus, Ligustrum.—XXIX. MONOTROPEÆ. Pyrola, Monotropa.—XXX. ERICINEÆ. Erica, Calluna, Menziesia, Azalea, Ledum, Andromeda, Arbutus.

SECT. II. *Cor. monopetalous perigynous* (*inserted upon the calyx*). SUBSECT. I. *Cor. monopetalous.*—XXXI. CAMPANULACEÆ, (lactescent and bitter, as is the following Order). Campanula, Phyteuma.—XXXII. LOBELIACEÆ. Lobelia, Jasione.—XXXIII. COMPOSITÆ. (*Cal.* adherent with the ovary, the *limb* entire or toothed or mostly expanded into a feathery *pappus*, which crowns the fruit. *Cor.* regular or irregular. *Stam.* 5, syngenesious. *Ovary* 1. *Style* 1, sheathed by the tube of the anther. *Stigmas* simple or bifid. *Fruit*, an *achenium*. *Seed* erect, without albumen. *Embryo* straight. *Radicle* opposite the hilum. *Stems*, in the British genera, herbaceous. *Leaves* opposite or alternate. *Flowers* capitate, inserted into a broad receptacle and surrounded by an involucre.) TRIBE 1. CICHORACEÆ, (bitter and narcotic, abounding in milky juice.) Tragopogon, &c. p. 337.—TRIBE 2. CINAROCEPHALEÆ. (bitter and tonic). Arctium, Carduus, &c. p. 349.—TRIBE 3. CORYMBIFERÆ. (aromatic, stimulant, containing bitter principle and essential oil.) Tanacetum, &c. p. 355. &c.—XXXIV. DIPSACEÆ. Dipsacus, Scabiosa, Knautia.—XXXV. VALERIANEÆ. Valeriana, Fedia.—XXXVI. RUBIACEÆ, (a most important natural family; of which those with woody, shrubby stems, and opposite stipulated leaves, afford the true *Cinchonas* or *Peruvian Bark;* *Coffee*, &c. These are confined to hot or warm climates, whereas we, in our country, possess only that groupe with *herbaceous stems* and *whorled leaves,* yielding a dye in the *roots,* and called STELLATÆ by Linnæus; thus characterized:—*Cal.* adherent with the *ovary, entire or toothed at the margin. Cor.* regular, 4—5 lobed. *Stam.* 4—5, between the divisions of the *cor. Ovary* 1. *Style* 2-partite or bifid. *Stigma* double. *Pericarp* 2-celled, 2-seeded. *Embryo* straight, imbedded in the axis of a horny *albumen. Radicle* inferior. *Herbs* with whorled leaves. *Flowers* axillary and terminal.) Rubia, Galium, Sherardia, Asperula.—XXXVII. CAPRIFOLIACEÆ. Lonicera, Linnæa, Viburnum, Sambucus, Hedera, Cornus.—XXXVIII. LORANTHEÆ. Viscum.

SECT. III. *Cor. polypetalous,* perigynous. XXXIX. UMBELLIFERÆ. (*Cal.* adherent with the *ovaries,* 5-toothed; *teeth* minute, often obsolete. *Cor.* of 5, often bifid or obcordate *petals,* sometimes very unequal, the outer ones the largest. *Stam.* 5, alternate with the petals, inserted on the underside of a thick fleshy disk, at the base of the *styles. Styles* 2. *Stigmas* capitate. *Achenia* 2, combined, attached to a central stalked *receptacle,* separating when ripe. *Seed* solitary, pendulous. *Embryo* minute, in the base of a horny *albumen; radicle* pointing to the *hilum. Herbs. Leaves* alternate, generally compound and embracing the stem with their sheathing bases. *Flowers* in *umbels.*—This order includes many poisonous plants, especially such as grow in watery places; many esculent and aromatic, usually such as inhabit dry situations.) Daucus, &c. p. 114.—XL. HALORAGEÆ. Hippuris, Myriophyllum, Callitriche.—XLI. CERATOPHYLLEÆ. Ceratophyllum.—XLII. ONAGRARIEÆ. Epilobium, Œnothera, Isnardia, Circæa.—XLIII. CUCURBITACEÆ. Bryonia.—XLIV. LYTHRARIÆ. Lythrum, Peplis.—XLV. SAXIFRAGEÆ. Saxifraga, Chysosplenium, Adoxa.—XLVI. GROSSULARIÆ. Ribes.—XLVII. PARONYCHIÆ. Corrigiola, Herniaria, Illecebrum, Polycarpon.—XLVIII. TAMARISCINEÆ. Tamarix.—XLIX. CRASSULACEÆ. Tillæa, Cotyledon, Sempervivum, Sedum, Rhodiola.—L. PORTULACEÆ. Montia.—LI. ROSACEÆ. (*Cal.* 4-5 lobed, free or adherent with the *ovary. Pet.* 5, perigynous, equal. *Stam.* perigynous, definite or indefinite, with an incurved æstivation. *Anther* 2-celled, bursting longitudinally. *Carpels* many, rarely solitary, 1-celled, 1-2 or more-seeded, combined together, or making one with the calyx. *Styles* simple, generally from below the extremity of the ovary, distinct or combined. *Seeds* ascending or suspended, nearly without *albumen. Embryo* straight, with fleshy or foliaceous *cotyledons. Herbs* or *shrubs* or *trees,* with alternate, stipulated *leaves. Stipule* one on each side the base of the petiole. All of these that bear pulpy or fleshy fruits are esculent. Many abound in prussic acid. Laurel-water is extracted, not from a true Laurel, but from *Prunus Lauro-cerasus.* The *bitter almond* owes its flavour to the presence of that acid. Some produce a gum, others are astringent. Roots of *Tormentil* yield a dye; others are febrifuges. The qualities residing in the species of this order entitle it to a high rank among British plants.) SUBORD. 1. AMYGDALEÆ. Prunus. SUBORD. 2. SPIREACEÆ. Spirea. SUBORD. 3. DRYADEÆ. Dryas, Geum, Rubus, Fragaria, Comarum, Potentilla, Tormentilla, Sibbaldia, Agrimonia. SUBORD. 4. SANGUISORBEÆ. Alchemilla, Sanguisorba, Poterium. SUBORD. 5. ROSEÆ. Rosa. SUBORD. 6. POMACEÆ. Mespilus, Cratægus, Cotoneaster, Pyrus.—LII. LEGUMINOSÆ. (*Cal.* inferior, 5-cleft, or 5-toothed. *Cor.* of 5 *petals,* papilionaceous. *Stam.* 10. monadelphous or diadelphous. *Ovary* 1-

celled. *Style and stigma* 1. *Legumen* 2-valved, dehiscent, or indehiscent. *Seeds* with or without *albumen*, upon a marginal receptacle. *Embryo* with the *radicle* recurved upon the *cotyledons*, which are long and thick. *Herbs* or *shrubs*. *Leaves* alternate, mostly compound and pinnated, with or without tendrils, stipuled.—They possess very various principles and properties, and many of the plants composing this order are of the greatest service in the Arts, in Medicine, and domestic œconomy. Their *seeds* afford food for man and various animals, their herbage for cattle.) Ulex, &c. p. 318.—LIII. RHAMNEÆ. (fruit of some, purgative and affording dyes;—of the *Jujube*, nutritive; the bark of others is astringent.) Rhamnus.—LIV. CELASTRINEÆ. Euonymus, Ilex, Staphylea.

SECT. III. *Cor. polypetalous, hypogynous,* (*inserted under the germen or ovary.*) LV. HYPERICINEÆ. (aromatic and resinous, juice sometimes purgative.) Hypericum.—LVI. ACERINEÆ. Acer.—LVII. TILIACEÆ. Tilia.—LVIII. MALVACEÆ. (*Cal.* 5-cleft, calyculate. *Cor.* of 5 *petals*, regular. *Stam.* indefinite, monadelphous, often united with the petals at their base. *Anthers* reniform, 1-celled. *Ovary* 1. *Styles* single or several combined. *Stigmas* several. *Fruit* of many cells and many valves, or of many *capsules*, which are dehiscent or indehiscent, inserted into a compact body, or placed in a whorl, round the base of the style. *Seeds* solitary, ascending. *Albumen* mucilaginous, not abundant. *Embryo* curved. *Cotyledons* foliaceous, plaited. *Herbs*, or *shrubs*, or *trees*. *Leaves* alternate, with *stipules*. *Flowers* axillary. They abound in mucilage, especially the seeds. The stems and roots afford an excellent fibre.) Lavatera, Malva, Althæa.—LIX. GERANIACEÆ. Geranium, Erodium.—LX. OXALIDEÆ (producing oxalic acid). Oxalis. —LXI. BALSAMINEÆ. Impatiens.—LXII. LINEÆ, (whose stems contain flax). Linum, Radiola.—LXIII. CARYOPHYLLEÆ. Buffonia, Mœnchia, Sagina, Holosteum, Elatine, Saponaria, &c. p. 199.—LXIV. FRANKENIACEÆ. Frankenia.—LXV. DROSERACEÆ. Drosera, Parnassia.—LXVI. RESEDACEÆ. Reseda.—LXVII. CISTEÆ. Helianthemum.—LXVIII. VIOLARIÆ. Viola.—LXIX. POLYGALEÆ. Polygala.—LXX. CRUCIFERÆ. (*Cal.* of 4 leaves. *Pet.* 4. *Stam.* 6. tetradynamous, alternate with the petals; 2 solitary, 4 in 2 pairs. *Ovary* and *style* 1, *hypogynous glands* at the base of the stamens. *Pericarp*, (a *pouch* or *pod*,) 2-celled, 2-valved, many-seeded. *Dissepiment* parallel with the valves. *Seeds* on a marginal receptacle, without *albumen*. *Radicle* curved upwards towards the margins of the cotyledons (o =), or against the back of one of them (o ||), opposite to the hilum. *Herbs*. *Leaves* alternate. *Flowers* in corymbs or racemes. A most important *Nat. Order*, many of the plants which it includes being cultivated as esculent; the *cabbage*, *turnep*, *mustard*, and *cress* of various kinds, *horse-radish*, &c. &c. They contain an essential oil, which renders them stimulating, while the *seeds* yield a fine and mild oleaginous fluid, as *rape;* and they are antiscorbutic. The mustard-seed is used for sinapisms. Several kinds contain sulphur and nitrogen, the basis of Ammonia) Cakile, &c. p. 293.—LXXI. FUMARIÆ. Fumaria, Corydalis.—LXXII. PAPAVERACEÆ. (*Cal.* of 2, deciduous leaves. *Cor.* of 4-8 petals. *Stam.* indefinite. *Ovary* 1. *Stigma* lobed. *Capsule* 1-celled, many-seeded. *Seeds* upon parietal receptacles, which form incomplete dissepiments. *Embryo* in the base of a fleshy albumen. *Herbaceous plants*, with alternate *leaves*. Opium is the product of these plants, which largely afford a milky acrid and narcotic juice; while the seeds of all, except *Argemone mexicana*, are mild and oleaginous.) Papaver, &c. p. 256.—LXXIII. NYMPHÆACEÆ. Nymphæa, Nuphar.—LXXIV. BERBERIDEÆ. Berberis, Epimedium.—LXXV. RANUNCULACEÆ. (*Cal.* of mostly 5, rarely 3 or 6 leaves. *Pet.* definite or indefinite, sometimes wanting. *Anthers* adnate, mostly reversed. *Ovaries* 1, or many, 1-or many-celled. *Fruit* consisting of several 1-seeded *carpels*, rarely a *berry*, sometimes follicled. *Embryo* straight, placed in the base of a horny *albumen*. *Herbaceous* or *shrubby*. *Leaves* simple or divided, with more or less dilated stalks. Acrid and poisonous.) Actæa, Myosurus, Pæonia, &c. p. 260. Thalictrum, &c. p. 262.

⊙ annual
♂ biennial
♃ perennial
♄ shrub or tree

CORRECTIONS AND ADDITIONS.

Page.

17, line 9. Omit entirely "*Crocus reticulatus.*" I have, since the account of it was printed, received specimens with the roots, from which it is evident that it is the *C. minimus* of Redouté. Insert therefore—

"*C. minimus*, Red. (*least Crocus*); stigma erect within the flower in 3 linear-clavate jagged segments longer than the stamens, throat of the corolla naked, leaves linear-filiform, coats of the bulb membranaceous, *Redouté Pl. Lil. v. t. ii.* 81. (*not Sm.*)."

In Sir Henry Bunbury's park, at Barton, Suffolk, along with *C. luteus*; certainly not wild. *Fl.* March. ♃.

32, l. 4 from the bottom; for "*αυρος*," read *αγρος*.

39, bottom line; for "*P. verticillatum*," read *S. verticillatus.*

49, l. 11 from the bottom; for "*B. squamosus*," read—*B. squarrosus.*

62, bottom line; before "leaves downy," insert—"β."

69, l. 3, add—*Nat. Ord.* CAPRIFOLIACEÆ. *Juss.*

70, l. 11 from the bottom, for "SALICARIÆ. *Juss.*" read—ONAGRARIÆ. *Juss.*

95, between sp. 2 and 3, insert—

"*V. thapsiforme, Schrad.*" stem simple, leaves lanceolato-ovate, raceme spiked dense, bracteæ longer than the woolly calyx, segments of the corolla obovate rounded, two anthers oblong, *D C.*" *Lindl. Syn. p.* 181. "*V. thapsoides, Willd.*"

"By road-sides in Kent. *Fl.* July, Aug. ♂." (*Lindl.*)

96, l. 9, for 2—3 cells, read 1—3 cells.

l. 13 from the bottom; omit "*Capsules* of 3—4 cells, less frequently of 2, never of 1. (*Mr. James Wilson*)," and insert—*Capsules* 1-celled.—Mr. James Wilson is now sensible that he was under a mistake in considering the *capsules* to be 3—4 celled: they are truly 1-celled, as described by Mr. Brown.

111, l. 20, for "Ben Nevis," read—Ben Lawers.

114, l. 16, for "*D. maritima*," read—*D. maritimus.*

123, l. 5, for "*οιυη*," read—*οιγη*.

134, l. 13, for "Rev. Mr. Tozer," read—Rev. Mr. Bree.

171, l. 5, for "JUNCEÆ," read—JUNCAGINEÆ. *Rich.*

187, add as Synonyms to *n.* 4. *Pyrola media.—Engl. Bot. t.* 1945. *Hook. in Fl. Lond. t.* 30. *Hook. Scot. i. p.* 127. *Engl. Fl. v. ii. p.* 256.

210, add as Synonyms. *Engl. Bot. t.* 1946. *Engl. Fl. v. ii. p.* 318.

301, l. 24, for "Coral-root," read—Tooth-root.

313, l. 1, after "the β. of *Smith*," insert—(*G. Raii, Lindl. Syn. p.* 57.)

311, between l. 16 and 17, insert—β. smaller, petals with purplish veins. *G. sanguineum, γ. Sm.—G. lancastriense, With.—G. prostratum, Cav.—Lindl. Syn. p.* 258.

333, last line, for "*M. runcinata*," read—*M. muricata.*

355, l. 4, for "Gen. 27—55," read—Gen. 27—47.

358, l. 13 from the bottom, for "Gen. 31—55," read—Gen. 31—47.

389, l. 18, for "this plant distinct," read—"this plant not distinct."

409, l. 28, after "There is a *var.* of this tree," add—(*B. pendula, Roth.—Lindl. Syn. p.* 229.)

ALPHABETICAL LATIN INDEX

TO THE

GENERIC AND SPECIFIC NAMES, THE SYNONYMS OF LINNÆUS AND OF SIR J. E. SMITH'S ENGLISH FLORA.

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From Hooker's third edition.

1. Veronica Buxbaumii — Buxbaum's Speedwell. Leaves all petiolate cordato-ovate inciso-serrate shorter than the flower-stalks, segments of the calyx lanceolate acute, stem procumbent, capsule obcordate of two turgid divaricated lobes which are compressed upwards and sharply keeled, cells about 8-seeded. — Fields &c. scarcely indigenous. Chalk-hole, near Margate. Burford, Oxfe: near Newcastle and Glasgow. ⊙ Sum. & Aut.

2. Fedia Auricula. — Sharp-fruited Corn Sallad. Capsule ovate acuminated somewhat inflated, slightly grooved in front, glabrous, crowned with the single entire tooth of the limb of the calyx, flowers corymbose, a sessile flower in the forks. June, July — Lindulph, Cornwall. ⊙

3. Crocus aureus. Golden Crocus — Two-flowered, stamens longer than the stigmas, segments of the corolla oblong, incurvo-patent, bulb coated with compact fibres. March — With C. minimus, not wild. ♃

4. Crocus speciosus. Showy autumnal Crocus. — Stigma within the flower erect in 3 deeply laciniated segments longer than the stamens, flowers appearing before the leaves. Oct. — near Warrington & Halifax ♃.

5. Trichonéma columnæ. Columna's Trichonema. Scape single-flowered; mostly solitary

solitary slightly drooping, leaves filiform compreſsed furrowed flexuose, spathas longer than the tube of the corolla, style shorter than the stamens, stigmas bifid at the apex.

6. *Scirpus* *Savii*. Savi's Club-rush. Stem round leafy below, spikelets 1–3 terminal shorter than the unequally two-leaved involucre, fruit subglobose rough with slightly elevated points bristles none. β. *monostachys*; spikelet solitary with a shorter involucral bractea. Ireland – Anglesea – Jersey – Devonshire. β. Cork – July. ♃.

7. *Asperula* *arvensis*. Field Woodruff. Annual, leaves 6—10 in a whorl linear-lanceolate obtuse, flowers aggregate terminal surrounded by long ciliated bracteas, fruit glabrous. Near Davenport ⊙.

8. *Potamogeton* *prælongus*. Long-stalked Pond-weed. Leaves oblong obtuse, with 3 principal and several leſser parallel nerves arising from the base connected by reticulations, peduncles elongated, spikes cylindrical many-flowered. β. foliis angustioribus. Scotland ♃ July.

9. Echium violaceum. Violet-flowered
Bugloſs. Stem herbaceous diffuse branc
ed piloso-hispid, lower leaves ovato-oblon
petiolate, upper ones oblong cordate and
somewhat amplexicaul at the base,
spikes elongated, stamens scarcely lon
ger than the corolla. - St Hilary, Jerse
August. ♂.?

10. Bupleurum falcatum. Falcate-leav
Hare's-Ear. Stem erect panicled; radica
leaves obovate on long stalks, upper
seſsile linear-lanceolate, partial invo-
lucre of 5 lanceolate leaves as long as
the flowers, universal 5-leaved. — Nea
Ongar.

11. Helosciadium Genus.
Cal. of 5 teeth, or obsolete. Pet. ovate,
obtuse, and apiculated. Fruit lateral
compreſsed, ovate, or oblong. Carpels w
5 filiform, equal, slightly prominent
ridges. Interstices with single vittæ.
Involucre various. Name ελος, a mar
and σκιαδιον, an umbel.

12. Petroselinum sativum. Common
Parsley. Leaves decompound shining
lower leaflets ovato-cuneate trifid and
toothed; upper ones lanceolate nearly
entire, partial involucres filiform.
Old walls, S.W. of England. June, July ♂.

13. **Statice plantaginea**. Plantain-leaved Thrift. Leaves linear-lanceolate 3_5 nerved, scape simple bearing a rounded head, leaves of the involucre cuspidate, awns of the calyx long. Jersey. June, July. ♃. Flowers pale purple.

14. **Rumex pratensis**. Meadow Dock. Enlarged petals unequal toothed at the base with an entire triangular point, one principally tuberculated, leaves oblong-lanceolate wavy, clusters nearly leafleſs, whorls distinct _ Marshes of the Adur and Arun, Suſsex. N. of London. June _ July _ ♃. most allied to R: crispus.

15. **Erica Mediterranea**. Mediterranean Heath. Anthers without awns and as well as the styles exserted, corolla narrow urceolate, bracteas above the middle of the peduncle, calyx coloured, flowers axillary, leaves 4 in a whorl. β. flowering branches and style shorter. _ Cunnamara. I. April. ♄.

16. **Elatine hydropiper**. Small octandrous Water-wort. Leaves opposite spathulate, flowers alternate seſsile erect octandrous tetrapetalous, calyx shorter than the petals, segments ligulate,

capsule

Nothochlaena californica
very [illegible] [illegible] N. [illegible]

[illegible] [illegible]

[illegible]

Nothochlaena [illegible]
[illegible] [illegible] under [illegible] of [illegible]

[illegible] [illegible] [illegible]
[illegible] [illegible] [illegible]
[illegible] & [illegible] of
[illegible] [illegible] [illegible]
[illegible] [illegible]

Asplenium [illegible] !

[illegible] [illegible]
[illegible] [illegible]
[illegible] [illegible]
[illegible] [illegible] for [illegible]
[illegible] of [illegible]

Gymnogramma
leptophylla -
Channel Islands recently
discovered there - annual

Gymnogramma totta &
——— L'herminieri
rare in England

Asplenium germanicum
very rare - approaches A.
ruta-muraria
Resembles in habit
Fronds pinnate, lower pinna
ternate; pinnae alternate
& distant, bifid or trifid at
the apex - the pinnae being
[illegible] of a ovid - cunea
[illegible], linear & very narrow
[illegible], being attached to
a tufted rhizome - length
2 to 3 inches - stipes dark at
the base green above / pinna
[illegible] pinnae - edge of indusium
smooth & even -

capsule roundish depressed 4-celled, seeds 16 in each cell pendulous much curved.—Llyn Coron, Anglesea. Aug. ⊙

17. Silene Italica. Italian Catchfly. Flowers panicled nearly erect, branches opposite, calyx long clavate, petals deeply bifid crowned the segments broad, radical leaves spathulate on long stalks, cauline ones sessile linear-lanceolate. Cliffs at Dover. June, July. ♃.

18. Stachys annua. Pale annual Woundwort. Annual erect downy, leaves oblongo-lanceolate rather acute crenato-serrate 3-nerved, the lower ones stalked, whorls of about 6 flowers spicate, cal. hairy its segments subulate, seeds roundish glossy. Field between Gadshill and Rochester. Aug. ⊙

19. Lathyrus pisiformis. Sea-side Pea. Peduncles many flowered shorter than the leaves, tendrils with 3–4 pairs of oval leaflets, stipules as large as the leaflets unequally cordato-hastate with the angles acute.—Pebbly beach of Lincolnshire, Suffolk, and the south coast of England.—Kerry, Ireland. July. ♃.

20. Astragalus alpinus. Alpine Milk-vetch — Pubescent, stem ascending, leaflets elliptical, stipules ovate free, legumes elliptical stipitate pendulous clothed with black hairs. Clova — July. 4.

21. Tragopogon major. Greater Goat's-beard. Involucre more than half as long again as the yellow corollas, leaves undivided glabrous acuminated channelled, peduncles thickened upwards. Near Eccles. Banks of the Tweed at Bingham by Coldstream. June, July. 8.

22. Doronicum plantagineum. Plantain-leaved Leopard's-bane. — Leaves toothed, radical ones on naked stalks ovate or slightly cordate produced at the base, cauline ones seſsile except the lowest which has a winged stalk with amplexicaul articles, intermediate ones cordato-oblong, upper ovato-acuminate. Salinghall, Eſsex — Widdington, Eſsex. June, July — 4.

23. Habenaria chlorantha. Yellow Butterfly Habenaria. Spur half as long again as the germen, lip ovato-lanceolate scarcely longer than the petals, anther cells parallel Profr. Melville

dry hea[illegible]

petals, cauline leaves lanceolate, radical ones 2 obovate patent. Kent. Perhaps often overlooked for H. bifolia. 4.

24. Carex Vahlii. Close-bearded alpine Carex. Spikes 3–4 roundish or oblong aggregated the terminal one with barren flowers at its base, stigmas 3, fruit obovate scabrous above with minute crystalline prickles shortly beaked longer than the ovate obtuse calyx, stem triangular rough at the edges. Braemar - Glen Dole Aug. Sept. 4.

25. Carex aquatilis. Straight-leaved Water-Carex. Sheaths none, bracteas long foliaceous, fertile spikes nearly seſsile cylindrical elongated attenuated below often acuminated with barren flowers at the extremity, fruit roundish-obovate with a short entire point, stem smooth obtusely triangular, leaves long straight narrow linear not fibrous at their bases. Clova Mountains. July, Aug. 4.

26. Salix Damascena. Damson-leaved Willow. Young shoots densely hairy,

leaves

leaves ovate or rhomboidal bluntly toothed silky when young at length nearly naked green on both sides, stipules half-heart-shaped, catkins (in flower) longer than the floral leaves, scales obovate, germen stalked naked, style divided longer than the diverging stigmas. S. of Scotland. Apr. ♄.

27. *Salix propinqua*. Flat-leaved upright Mountain Willow. – Erect, young shoots minutely pubescent, leaves elliptical obscurely crenate nearly flat with slightly sunken veins nearly naked on both sides pale green beneath, stipules small vaulted glandulose, germen stalked silky towards the point, style longer than the notched stigmas. Discovered in Britain by Mr Anderson. ♄.

28. *Salix tenuior*. Narrow-leaved intermediate Willow. Leaves on slender stalks obovato-lanceolate acute obsoletely crenate flat naked on both sides glaucous beneath, stipules acute glandulose, catkins slender lax, scales acute longer than the silky stalk of the

capsule.

capsule, style longer than the ovate stigmas. Near Killin. May. ♄.

29. *Salix laxiflora*. Loose-flowered Willow. Upright, young shoots slightly pubescent, leaves naked flat broadly obovate narrowed at the base slightly toothed glaucescent beneath, upper ones acute, stipules small concave, catkins loose, germens stalked bluntish naked in the lower part, style as long as the linear divided stigma. Killin in Breadalbane. Apr. ♄.

30. *Salix phillyreifolia*. Phillyrea-leaved Willow. Leaves elliptic-lanceolate acute at each end strongly serrated naked on both sides glaucous beneath, stipules small, young shoots pubescent, scales oblong hairy longer than the glabrous stalk of the glabrous germen, style as long as the stigmas. Highland valleys. N. B. Apr. ♄.

31. *Aspidium rigidum*. Rigid Shield-fern. Fronds narrow-lanceolate bipinnate, pinnules subcordato-oblong obtuse pinnatifido-serrate the segments subbidentate, the teeth mucronulate,

-late, stipes and rachis chaffy, fructifications in the upper half of the frond. Ingleborough, Yorks:e

32. Fedia carinata. Carinated Fedia Capsule oblong rimoso-carinate glabrous the 2 sterile cells nearly equal to the fertile one, crowned with the straight single tooth of the limb of the calyx: Ongar, Essex. ⊙ -

33. Valeriana calcitrapa.

Extract from a Paper by Professor Forbes on the Geological Relations of the existing Fauna and Flora of the British Isles

In the following remarks the existence of specific centres is taken for granted, i.e. of certain geographical points from which the individuals of each species have been diffused. This being assumed, the problem to be solved is, the origin of the assemblages of the animals and plants now inhabiting the British islands.

There are three modes in which an isolated area may become peopled by animals & plants

1st By special creation within that area.
2nd By transport to it.
3d By migration before isolation.

Since with a very few most doubtful exceptions, the animals & plants of the British isles are identical with continental species, the first mode can have had but little influence.

The second mode is not a sufficient one; for when we consider that within a limited area a great number of plants and animals are not universally dispersed, but congregated into distinct provinces, which have remained unchanged as long as we have any record; we can hardly grant transporting powers to have operated so far as to sketch out those provinces, and yet not afterwards to have continued their action, so as eventually to have merged them all into a homogeneous whole.

The third mode, colonization from neighbouring lands previous to isolation, involves the consideration of geological causes. Before showing that through this mode the British islands have chiefly acquired their fauna and flora, it may be well to point out certain peculiarities presented by their natural history, well known to British botanists and zoologists.

The vegetation of the British Isles presents a union of five well-marked floras, four of which are restricted to different provinces, whilst the fifth, besides exclusively claiming a great part of the area; overspreads and commingles with all the others.

I. Commencing with the smallest, we find the mountainous districts of the W. & S.W. of Ireland characterized by botanical peculiarities which depend on the presence of a few prolific species. The nearest points of Europe where these plants are native is the N. of Spain. The species are *Saxifraga* umbrosa, elegans, hirsuta, Geum, hirta, and affinis – *Erica* Mackaiana & mediterranea {*Dabœcia* Menziesia polifolia – *Arbutus* unedo, *Pinguicula* grandiflora – *Arabis* ciliata. There are two or three other species, includin *Allium* Babingtonii, which poſsibly belong to the same aſsemblage – There is no

evidence of any local aſsemblage of animals
corresponding to this flora.

II. In the S.W. of England and S.E. of Ireland
we find a flora which includes many species no
elsewhere seen in the Brit. I.s, & which is inti
mately related to the Channel Is. and the neig
bouring part of France. In the Channel I.s,
we find them aſsociated with plants not nativ
of Eng:^{d} or Ire:nd plants which mark the com-
mencement of a southern type of vegetation
They are accompanied by terrestrial mollu
ca of the same type, as *Helix* aperta and
H. revelata; the former being at its most
northern limit, and the latter only extends
into Devonshire. Thither it accompanies a
number of plants whose range does not exten
beyond this corner of England. Such are,
Helianthemum polifolium - *Tamarix* gallica
Hypericum linearifolium - *Oxalis* cornicula
Lotus hispidus, *Corrigiola* littoralis, *Poly-
carpon*

carpon tetraphyllum, *Bupleurum* aristatum, *Physospermum* cornubiense, *Lobelia* urens, *Erica* ciliaris, *Salvia* clandestina, *Trichonema* columnæ, & *Scilla* autumnalis. In the S.E. of Ireland we find the number of plants of this Gallican type greatly diminished; whilst such as are present are species met with also in the S.W. of England. Such are *Matthiola* sinuata, *Senebiera* didyma, *Medicago* denticulata, *Rubia* peregrina, *Antirrhinum* orontium, *Linaria* elatine & italica, *Scrophularia* scorodonia, *Sibthorpia* Europæa, *Erica* vagans, *Cicendia* filiformis, *Teucrium* scordium, *Hottonia* palustris &c. This is the Atlantic type in Mr Watson's arrangement of British types of vegetation.

Helix pisana extends its range through a great part of this region. Testacellus haliotideus is confined to the English portion. The presence of the Bufo calamita in Ireland is probably also proper to this province,

III. In the S.E. of England, where the cretaceous rocks are chiefly found; the vegetation is distinguished by a number of species common to the opposite coast of France. They form part of M^r. Watson's 2^d. or Germanic, and of his 3^d. or English type.

Thlaspi perfoliatum, Linum perenne, Genista pilosa; Onobrychis sativa, Bryonia dioica, Caucalis daucoides, Dipsacus pilosus, Inula conyza, Centaure calcitrapa, Phyteuma orbiculare, Gentian pneumonanthe, Verbascum lychnitis, thapsiforme & blattaria, Salvia pratense, Ajuga chamæpitys, ?Buxus semperviren Tamus communis, & many species of Orchideæ; though not all chalk plants, are members of this flora. Clematis vitalba, & some others appear to be equally member of it, and of the last region.

Helix pomatia, obvoluta, limbata, carthusiana, & carthusianella, Clausilia ventrico & Bulimus montanus belong to this region

IV. The summits of our British Alps have always yielded to the Botanist a rich harvest of plants which he could not meet with elsewhere among these islands. Of these there are numerous species on the Scotch mountains, comparatively few on those of Cumberland and Wales. But the species found on the latter are all with a single exception (Lloydia serotina) inhabitants also of the highlands of Scotland, whilst the alpine plants of the Scotch mountains are identical with plants of more northern ranges, as the Scandinavian alps, where however, there are species associated with them which have not appeared in our country. This progressive diminution of alpine forms southwards is an important fact.

The first plant of this Scandinavian type which disappears southwards is the Arenaria norvegica, confined to the most northern of the Shetland Isles. On the northern shores of the mainland the Primula scotica, abundant in Norway appears and ceases. The following do not reach the English mountains: Draba rupestris, Lychnis alpina, Arenaria rubella, Astragalus alpinus, Sibbaldia procumbens, Saxifraga cernua and rivularis, Arctostaphylos alpina, Phyllodoce cærulea, Azalea procumbens, Gentiana nivalis, Myosotis suavolens, Veronica alpina & saxatilis, Salix arenaria, Betula nana, and many species of Juncus, Luzula & Carex. Of these the Phyllodoce cærulea; has nearly disappeared, a victim to the ardour of collectors. The following are leſs truly alpine but do not range south of Scotland, as, Moneses grandiflora, Pinguicula alpina, Ajuga pyramidalis, Goodyeria repens, Corallorhiza innata; while Cornus suecica, Linnœa borealis and

Trientalis Europæa, are very characteristic Scandinavian species. To the Welsh mountains few of these northern forms reach, but among them are some of the most characteristic. Such are *Arabis petræa*, *Cerastium alpinum*, *Potentilla alpestris*, *Sedum villosum*, *Saxifraga muscoides* and *nivalis*, *Erigeron alpinum*, *Salix reticulata* & *herbacea*, *Juncus filiformis* & *triglumis*. In Ireland, also, a few of these alpine or sub-alpine plants of Scandinavian origin are found, probably derived from the same source, & with them some of those inhabiting the low country, such as *Lamium intermedium* a common plant also in Scotland.

The fauna of our mountain regions, so far as it is developed, bears the same relation to more northern countries, & the insects which give a character to the entomology

mology of the Highlands are Scandinavian forms. The Highland, and part of the Scottish and Hebridean types of British vegetation, as defined by Mr Watson, agree with this fourth Flora. In his Hebridean type he includes the rare Eriocaulon septangulare, a remarkable plant, known in Europe only in the Hebrides, and Connamara in Ireland; but Boreal America is its native country; whence, either by means of transport now in action or formerly, it has probably been introduced naturally into the British Isles.

V. The fifth and general Flora of the British Islands—everywhere present, alone or in company with the others, is the Flora of Central and Western Europe—that which may be properly styled Germanic. Such of its members as are generally distributed compose the British type of Mr Watson, whilst its more local

local species are distributed among, and form part of his Germanic, English and Scottish types. This is a flora which has overspread many local floras throughout Europe, and given a general character to the vegetation derived from the presence of such common species as the Daisy, Primrose and our most common trees and shrubs. Its scarcer plants are of more interest, from the clear manner in which they mark the progreſs of the flora, and the line it took in its advance westwards. Thus we find still limited to the eastern counties of England, such species as Anemone pulsatilla, Myosuru minimus, Turritis glabra, Frankenia lævis, Holosteum umbellatum, Schleranthus perennis, Artemisia cam-

pestris, Melampyrum cristatum, *Veronica verna* & *triphyllos*, *Stratiotes aloides*, and *Sturmia Loeselii*. Others again, whilst they have extended over considerable tracts, or into several districts of England and Scotland, have not found their way to Ireland. Some, such as *Primula farinosa*, *Lysimachia thyrsiflora*, and *Convallaria verticillata*, seem to indicate a more northern point of derivation of this Germanic flora than that from whence the main part of its assemblage of plants came. It is remarkable, that certain species of this flora, which flourish best on limestone, such as *Scabiosa columbaria*, *Sison amomium*, *Campanula glomerata*, and others, are not found in the

limestone

limestone districts of Ireland, and in like manner certain species, which delight in sand, as Ajuga chamæpitys, are also wanting on such Irish localities as are best adapted for them.

The fauna which accompanies this flora presents the same peculiarities & diminishes towards the north and west.

Gladiolus Illyricus – one
plant found at Shanklin
1855

[illegible]
or Jacquinia —

Tubo-cellular tissue to be seen
in Sphagnum a bog moss
& orchidaceous leaves, in Cobaea

Ulmus. p. 20. Dr. Henderson, at the
[illegible] [illegible] Jan. 7-1849 stated that
the [illegible] which are referable to two species,
U. campestris and U. montana: the former
are [illegible] [illegible] near the abodes of the
original [illegible] the [illegible] of which [illegible]
[illegible] [illegible] or [illegible] doubt — the latter [illegible]
is seed[illegible] [illegible] [illegible] the [illegible] [illegible]
[illegible] which [illegible] [illegible] [illegible].
[illegible].

Menziesia polifolia
Eriocaulon septangulare
Orchis maculata –
Habenaria chlorantha
Nardus stricta
Orchis pyramidalis
Nymphæa alba
Alisma ranunculoides
—— Plantago
Triglochin palustre
Myosotis cæspitosa
Nasturtium officinale
—— terrestre
Polygonum Persicaria
Arctium Lappa
Eleocharis palustris
Scirpus lacustris β.
Sparganium simplex
Hypericum elodes
Erythræa Centaurium
Utricularia minor ~~[illegible]~~
Rhyncospora alba
Nuphar lutea

Plants - Galway

Menyanthes trifoliata - plentiful
Eriophorum -
Narthecium ossifragum
Drosera longifolia - Anglica & rotundifolia
Callitriche verna
Erica tetralix & cinerea
Thymus serpyllum
Rhinanthus Crista-Galli
Gnaphalium dioicum
Geum urbanum
—— rivale
Pedicularis palustris
Osmunda regalis
Asplenium filix-fœmina
Blechnum boreale
Schœnus nigricans
Cotyledon umbilicus
Geranium robertianum
Myosotis arvensis
Parietaria officinalis

Books recommended

Babington's Botany - Prof. Melville

Koch's dº German - dº

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